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ADDRESSES AND ORIGINAL ARTICLES

DE MINIMIS *

By WILFRED TROTTER, M.S. LOND., F.R.C.S. ENG., F.R.S.
SURGEON TO UNIVERSITY COLLEGE HOSPITAL

I

THE familiar saying from which I have taken my title and my text tells us that the law does not concern itself with very small matters—*de minimis non curat lex*. If this aphorism gives an authentic glimpse of the legal mind, it tells us also that that enigmatic organ differs sharply in at least one particular from the mind of science. For it is characteristic of science not to value things by their size or according to their apparent importance in the eye of common sense. The scientific world is a democracy of facts where the inhabitants are of equal standing and there is no table of precedence. Indeed the progress of knowledge has been in great part the discovery of the importance of small things and the exaltation of the insignificant. The great development of the medical sciences in the last sixty years has got most of its strength from such a continued revelation of the minute. At its beginning was the demonstration of the meaning of bacteria in disease, about its middle the discovery of the vitamins, in its recent stages the study of the viruses. All these have been concerned with things or substances of which the effective action has been in spite of sizes or amounts excessively small. The theory of microbic disease displaced supposed causes of what we may call naked-eye size—cold and wet, damps, miasmas, and infected airs. For them it substituted bodies at that time almost inconceivably small—the veritable minims of nature. I use that term "minims of nature" to express the smallest imaginable dose of life, not only because in that sense it has good authority behind it—no less, for example, than that of John Milton—but because in this company it must come to our ears with a homely sound. Perhaps we may regret that the pioneers of bacteriology did not revive it instead of inventing in 1878 the term microbe out of misused Greek. If they had been content with established English a pleasant link would have been left between the language of pharmacy and that of pathology. We might well also have been grateful to be able to speak of the viruses as "minims of nature" when we learn that there are among them living particulate and formidable agents so small as to surpass by little the individual *molecules* of hæmoglobin.

The theory of deficiency disease introduced to pathology a principle as wholly new as did the microbe. Like that it involved an immense change of scale and the demonstration that what might be called the naked-eye view of the constituents of the living body was inadequate. But the new principle was of a different kind from that necessary to found bacteriology. No pursuit of the old climatic and sanitarian theories of disease with whatever thoroughness could have led to the doctrine of microbic pathology without the revolutionary inquiries of Pasteur which disclosed an unsuspected mode of existence. On the other hand dietetics failed to disclose the vitamins because inquiries had not been exact and exhaustive enough. The problem of the vitamins was in fact a residuary problem. The dietetic field had been harvested and even gleaned except for what seemed a few inconspicuous remnants that for a long time it was agreed to ignore. Yet it was these very residues that were to yield the richest harvest of all. This peculiarity makes the solution of the vitamin problem of special interest to the student of scientific method. It is therefore as the leading recent case of a problem of the residuary type that I have reminded you of it, for I propose to call your attention in some little detail to that class of problem and its significance for the theory of method.

The economic value of working-over rejected residues has often been proved by the mining engineer and the metallurgist; similarly the need for vigilance in securing complete exhaustion of raw materials has shown its value to the chemist and the pharmacist. These lessons may usefully serve as metaphorical injunctions in the prosecution of scientific research itself. Time after time it has been shown in the latter activity that the humblest residual phenomena have concealed great secrets. In order to give this point all the salience I can, I shall go outside the field of medicine, and even of the biological sciences, to that of inorganic chemistry, and shall venture to recall to you the familiar and even hackneyed story of the finding of argon and the other inert gases of the air.

II

In the last quarter of the eighteenth century the study of the elementary gases was being pursued in England with much activity. Among those who were thus engaged we chiefly remember to-day the names of Priestley, Watt, Black, and Cavendish. Of these, Henry Cavendish was perhaps the ablest investigator as he was certainly the most extraordinary man. He was a millionaire and the grandson of a duke; yet his mode of life was hermit-like and spartan, his manner shy to the extent of oddity, and though he was a great experimenter, the publication of his researches was notably careless and hesitating. This last characteristic left his reputation for long far below his merits, but to give a measure of his real quality we need only recall that he was the first to demonstrate the constitution of water by hydrogen and oxygen and its synthesis from those elements.

Sometime before 1785 Cavendish was studying the separation of nitrogen from the air. He used the method of passing a stream of electric sparks through a glass tube containing air mixed with excess of oxygen. The nitrogen and oxygen combined to form an oxide of nitrogen which was absorbed by a solution of caustic potash, while the oxygen was removed by another absorbent. When, therefore, the process was complete and all the nitrogen oxidised, his tube should have been empty of any gas. But the result was different and I will quote his description of it, using however the modern terms for the gas concerned. After these processes he says, "a small bubble of air remained unabsorbed which was certainly not more than 1/120 of the [nitrogen] let up the tube. So that if there is any part of the [nitrogen] of our atmosphere which differs from the rest and cannot be reduced to nitrous acid we may safely conclude that it is not more than 1/120 part of the whole." That bubble, of course, was argon. Cavendish had seen it, but argon remained undiscovered. If

* Delivered before the Guild of Public Pharmacists on Jan. 18th.

curiosity was aroused at any time during the next century by this ambiguous residue in Cavendish's eudiometer, it has left no record; and we may be sure that any questionings were invariably stilled by the comfortable assumption of experimental error.

III

It was over a hundred years later, in the last decade of the nineteenth century, that the meaning of this residue was explained, but the residue itself had first to be rediscovered by a wholly different line of approach. Chiefly owing to the work of Cavendish and his contemporaries, inorganic chemistry had experienced a continuous and successful development; but it had now fallen, as those of us who were students then can remember, on rather hard times. It had reached one of the flat periods to which all purely experimental sciences seem to be subject. The inspiration derived from its founders, after burning brilliantly for so long, was dying down. Ideas were few and—an even more ominous sign—were apt when they were at all speculative to be deprecated in the name of science. This dread of speculation, and the disguise of it as scientific austerity, are characteristic symptoms shown by an experimental science when its life is running thin. Such phenomena were, for example, apt to appear in the discussion of one of the few speculative conceptions that had found any kind of currency among chemists—the once famous "Prout's hypothesis." William Prout, it may be of interest to recall here, was a doctor as well as a chemist, and the discoverer of the presence of free hydrochloric acid in the gastric juice. As early as 1815 he enunciated the view that there must be a simple numerical relation between the atomic weights of hydrogen and the other elements, and that hydrogen was a sort of elementary substance that in some way entered into the composition of the others. Even on the evidence then to be reckoned with, this was a sensible and not very recondite guess, but in the next seventy or eighty years it produced from time to time a surprising amount of indignant criticism. It must of course be admitted that to those who had comfortably settled down to the view that each element is made up of irreducible indivisible billiard balls of a special kind, it was an irritating and repulsive dose. By them it was naturally criticised as a flighty departure from scientific rectitude, and I can remember the feeling some of my teachers gave me that it was a little disreputable even to entertain such an idea. Yet it was true; and it gave the hint that was to begin an energetic revival and extension of inorganic chemistry.

The hint was taken by a man whose personality (fortunately preserved for us by his son in a notably graphic memoir) would in itself justify the recall of the events that ensued. The third Lord Rayleigh was born into a family of country squires and landowners, and in many respects was thoroughly representative of his class. He was as strong a Conservative, as sound a church-goer, and as firm an upholder of the established order as his position and convictions demanded. He was brought up among the assumptions of a world which seemed to itself endowed and established for ever, and which is still indestructibly preserved for us in the annals of Middlemarch and Barchester. The main physical circumstance of his youth was the profound security of rural England, where the mild landscape and the deeply rooted village looked humbly to the Great House standing side by side with the church. Experience shows that a type and an environment such as this are not among the richer sources of our scientific masters. But they permitted Rayleigh, as they had permitted Henry Cavendish, to become one of the leading physical investigators of his day; and they perhaps reinforced, in the case of Rayleigh, the caution, the patience, and the stable judgment in which he conspicuously excelled.

It was these last gifts that were to be of decisive value when in 1882 he yielded, as many physicists had done before, to the siren song of Prout's hypothesis, and made up his mind to decide once for all whether, if every precaution that even his patience could suggest were taken, it might not be possible to show that a simple arithmetical relation did obtain between the atomic weight of hydrogen and those of the other elementary gases. This involved the weighing of these gases under exact conditions, and was of course an enormously laborious task. After some years the work on hydrogen and oxygen was completed, but though it failed to bring the atomic weight of the latter nearer to the hoped for 16 than 15·882, we find him in 1892 at work on nitrogen which had promised to be technically a less arduous affair. Things went well with this, and he was comparatively soon in possession of a stable weight for the gas that satisfied his exacting standards. He might well have supposed his task was done, but in fact he was innocently approaching its crisis. He had been weighing nitrogen got from air and therefore, as we now know, mixed with the heavier argon. This would be discovered only if the weight obtained were compared with the weight of nitrogen got from chemical decomposition and therefore free from argon. He stood thus at the parting of two courses of infinitely different significance. A good and consistent series of weights had been obtained; any man might have been satisfied with such a result. Down that road lay a moderate satisfaction and relief from a long and inexpressibly tedious research, but nothing else. He might, on the other hand, decide that he must confirm his results by work on nitrogen got from another source than air. Down that road, all unsuspected, lay heavy labours and anxieties, but also lay the finding of argon and consequences beyond any dream. There cannot have been many more critical moments in the history of science.

IV

It is a natural impulse of historians to make a good deal of what are called the turning points of history. At these nodes in the story of the past there is apt to be a concentration of issues on a single hour or on a single man, an intensification of meaning that gives dignity even to the trivial, a heightened illusion of free will in the actors. All these combine to endow the vague historic plungings of mankind with an air of design and æsthestic structure, so that it is but a poor historian who does not make an effective scene of Cæsar at the Rubicon, or Charles Edward at Derby. The history of knowledge has not been much recognised as yielding moments of an equal intensity, perhaps because its high occasions are undecorated by trumpet or banner and call to mind no sound of marching feet. But to the ear in tune with the finer vibrations of reality, science has had its crises which give a not less authentic thrill, and here was one of them. We watch Rayleigh at this turning point in the history of science with a confidence that is derived from our knowledge of his character as much as from our knowledge of the sequel. His caution and patience and judgment

now had their unique opportunity. He decided that nitrogen prepared from chemical combination must also be weighed to confirm the weight obtained from atmospheric nitrogen, and he was soon brought up against a clear and unshakable discrepancy between the two results; the chemical nitrogen was ½ per cent. lighter than the atmospheric nitrogen. It is not necessary to follow the steps of the toilsome research by which it was proved that the excess weight of the atmospheric nitrogen was due to mixture with an unknown constituent of the air. At the end it became clear that this unknown gas was the "small bubble of air" which had "remained unabsorbed" in Henry Cavendish's eudiometer, and whose enigmatic presence had stood in the background of chemistry inviting curiosity in vain for over a hundred years. It was composed of the inertest substance in the physical world. In the intellectual world however it produced a veritable series of explosions. Argon led to helium and neon; helium pointed the way to the mode of disintegration of the radio-active atom, neon to isotopes and the meaning of the periodic succession of the elements. It is therefore no departure from rational moderation to say that this historic "bubble of air" was one of the most pregnant residues in the whole history of chemical analysis.

Whatever intrinsic interest this old story may possess, I should not have ventured to tell it except as a classical illustration of the significance of residuary phenomena in the history of science. That general lesson must surely provoke us to ask what application of it we can make in the departments of knowledge with which we are more specially concerned. I propose therefore to consider briefly certain aspects of medicine to which it may be relevant.

V

The fundamental activity of medical science is to determine the ultimate causation of disease. That statement sounds like a complete commonplace and should be one. We may perhaps, however, feel some doubt whether we all of us keep it in mind as clearly as we might. The brilliancy and the practical value of the great discoveries that have elucidated the processes of disease tend a little to obscure the fact that many of them tell us nothing about ultimate causation. Thus we are apt to speak of the treatment of myxœdema by thyroid extract or the treatment of diabetes by insulin as if the primary pathological state were affected by the remedy instead of being merely compensated for. As a matter of fact, when we come to survey more attentively the general state of medical science we cannot but be struck by the slight extent to which much recent progress—as, for example, that on the relation of internal secretion to the production of symptoms—has enlightened us in the matter of ultimate causes. A great deal of this work, though of course of the greatest value, has been on what we may call the physiological level, and has scarcely penetrated to fundamental pathology.

It may be interesting to glance over in a summary way the actual situation as regards our knowledge of the causation of disease. At present we can enumerate only six agents:—

Injury.	Poisoning.
Malformation.	Parasitic infection.
Defect of diet.	Neoplasm.

Of these it will be noticed that two—malformation and neoplasm—are not to be regarded as primary in a strict sense, since in time they will almost certainly be resolved into other factors. Setting aside, therefore, the pathological phenomena deriving from these two, we may say that we have for the explanation of the whole of the rest of disease only four principles—injury, defect of diet, poisoning, and parasitic infection. Let us now approach the situation from another aspect. The diseases known to us fall into three groups: first, those that can be assigned with certainty to one of the four causes we have enumerated; secondly, those which have been assigned with more or less probability to one of these; and thirdly, those of which the cause is unknown. The rate at which fresh diseases pass over from the third group to the first, and are found to be due to one of the known kinds of cause, is nowadays slow, and tends necessarily, other things being equal, to become slower. The question thus inevitably arises whether a time may not come and how far away it is, when the application of known principles to the explanation of disease will be at a standstill. Another way of putting the same question would be to ask how far it is likely that the further extensive explanation of disease depends on the discovery of some totally new principle comparable with the microbe or the vitamin. Consider such common and serious diseases as exophthalmic goitre, diabetes, and disseminate sclerosis. They have been under investigation a long time and with an increasing refinement of method, yet, however much we may have learnt of their mechanism, we still know nothing about their ultimate causation. Are they likely to be brought under causal mechanisms we already know, or are they and other diseases in a similar situation, like the residuary "bubble of air" in Henry Cavendish's eudiometer, awaiting for their explanation some radical fresh development? In answer to these questions we cannot make even a plausible guess.

In the last sixty years two wholly new causes of disease have been discovered—microbic infection and vitamin deficiency. The first of these explained a group of diseases which carried a certain broad clinical resemblance, so that a very acute clinician, in the days before bacteriology, might well have been able to guess that whatever their causes they were of the same general order. The case was strikingly different with the diseases explained by vitamin deficiency. In their clinical manifestations these were remarkably miscellaneous, and showed differences of the widest kind, such as, for example, those between rickets, beri-beri, and scurvy. No clinician, however alert, could have guessed that these were due to cognate causes. Furthermore, the deficiency diseases seem actually to mimic the diseases caused by other agents; consider, for example, the resemblance between vitamin-B deficiency and alcohol poisoning, each with its acute cerebral symptoms and chronic peripheral neuritis, and the resemblance of scurvy to an infection. The discovery of deficiency diseases has thus disclosed that allied causes may produce clinical effects showing no hint of any kind of relation, and has thus made it more difficult than ever to infer from clinical phenomena any suggestion as to new prime agents of disease.

VI

I should have hesitated to indulge in these extended reflections about residuary phenomena in relation to science in general and medicine in particular, if I had intended to abandon the subject in the complete blind alley into which it seems to have led us. It is true that we can form no reasonable opinion

whether the great mass of disease still remaining unexplained will be cleared up by the more thorough exploitation of principles already known to us, or whether its final elucidation will be in any or in great part made by the discovery of some new kind of cause. Engaging as that problem must be to any philosophic student of medicine, it must remain for the present in the region of insoluble conjecture, but its interest may have a useful property if it sends us for some hint of guidance back to the history of science. If we may be allowed to return for a moment to a topic on which we have perhaps already too inordinately dwelt, we shall recall that the discovery of argon was due to Rayleigh's determination to carry the measurement of the known phenomena to a finer point than had yet been reached. In his branch of knowledge the saying that science is measurement was already familiar and manifestly true. As an indirect result of his work the idea can now be carried much further, and we can say that, at least in the atomic world, all quality is quantity. In such a doctrine we seem to be very far from the biological sciences, and still further from anything that could ever be recognisably human. Nevertheless it may remind us that the need and use for exact measurement in those sciences have steadily increased and must continue to do so.

Up to the present time medicine has almost wholly avoided the burden of measurement. Its field is so rich and various that qualitative methods of inquiry have proved at least adequate. Signs, however, are beginning to be perceptible that perhaps the main harvest of those methods has been gathered. If these omens are fulfilled, a time will come when an exact and exhaustive numerical exploration of the facts of disease will have to be undertaken. When we contemplate the practical success and the continued progress of medicine we are apt to overlook the fact that it is without precise data. Consider merely the distribution of health and disease in relation to topography, climate, race, sex, and age. Our knowledge of these fundamentals is a series of the vaguest approximations; if we had really exact knowledge of them it is quite probable that many problems of causation now insoluble could be solved by inspection. A similar lack of real exactitude is present in our knowledge of normal functions such as the pulse-rate, temperature, reflexes, sleep, appetite, right-handedness, weight and muscular strength, and above all, in our knowledge of the extent to which these functions are capable of adaptation.

It is obvious that to obtain information of the required precision on matters such as these is altogether beyond the range of the individual worker. Thus our final conclusion must necessarily be that if medicine is to acquire a secure foundation of exact and measured data, it can do so only as the result of inquiries far more widespread and coördinated than have yet come within the range of practical contemplation.

The considerations we have surveyed have led us through a course of which the windings may not have shown any very clear relevance to this occasion. Our conclusion, however, could not have been reached in circumstances more appropriate. The only branch of medicine which has always and with increasing intentness and success pursued the ideal of exact measurement is pharmacy. I do not think there can be any reasonable doubt that the future of the parent subject to a large extent depends on how far she is able to adopt the characteristic method of her daughter.

HORSESHOE KIDNEY

AN ACCOUNT OF FIVE CASES

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The term horseshoe kidney implies a fusion of the kidneys across the vertebral column. The connecting isthmus varies from a narrow fibrous or parenchymatous bridge to complete fusion along the mesial borders.[1] In the majority of cases the isthmus runs between the lower poles, averages in width 4 to 5 cm., and crosses in front of the aorta and vena cava at the level of the fourth or fifth lumbar vertebra. Each kidney has its own pelvis and ureter, the latter passing ventral to the isthmus and terminating, as a rule, in the normal position in the bladder. The incidence, as obtained from autopsy records, is 1 in every 643 cases.[2] As would be expected, the statistics taken from operations show a much higher ratio, because pathological changes are especially apt to arise in this form of anomaly. In 2424 operations[3] on the kidney reported from the Mayo Clinic, 17 cases of horseshoe kidney were found. Since publishing a report of horseshoe kidney[4] two years ago, I have met with five further cases. I think an account of these will serve a useful purpose, for the records of many observers bear witness to the great difficulty of diagnosing this condition. In the series of 17 cases from the Mayo Clinic, Judd, Braasch, and Scholl[3] diagnosed the anomaly pre-operatively only eight times. According to Lazarus,[5] a correct diagnosis was made in only 12 cases out of 108 operations on horseshoe kidneys collected by Loeffler; in 1 out of a series of 3 by Rathbun; and all the 9 cases reported by Oraison and Gayet were diagnosed on the operating table.

CASE REPORTS

Case 1.—A man, aged 23, was referred to the urological department of the Glasgow Royal Infirmary complaining of increasing difficulty in urination of three years' duration. He also suffered from generalised abdominal pains and a frequent feeling of abdominal distension. On three occasions during one day, eight months previously, he had passed blood in his urine.

Cystoscopy showed some injection of the trigonal vessels but no other vesical abnormality. A mediumly concentrated dye appeared at the right ureteric orifice five minutes after an intravenous indigo-carmine injection. No dye appeared from the left orifice after eight minutes' observation. A No. 10 ureteric catheter was passed into the right ureter as far as the renal pelvis without difficulty, but it was found impossible to insinuate either a No. 10 or No. 9 catheter farther than 1 cm. up the left ureter. A pyelogram was therefore made of the right kidney only, 17 c.cm. of sodium iodide being injected before any renal uneasiness was produced. The skiagram (Fig. 1) showed a bizarre-shaped, slightly dilated pelvis lying very close to the middle line, the lowest calyx pointing downwards and medialwards. A horseshoe kidney was diagnosed. A further attempt was made later to catheterise the left ureter, but was not successful. An intravenous urographic examination was therefore made, using as the medium 100 c.cm. of 40 per cent. uroselectan. This revealed a marked dilatation in the left segment, which it was decided to resect.

At *operation* in July, 1930, the approach was made through an extraperitoneal lumbar incision. The upper pole, which did not appear to be unusually low, was isolated. The isthmus consisted of parenchymatous tissue, was about 4 cm. in width, and crossed in front of the great vessels. The ureter ran anterior to it. After dividing the latter, the posterior surface of the kidney was freed. The pedicle consisted of two separate groups of vessels, one going to the upper pole and the other to the hilum. These were clamped, divided, and ligatured. The isthmus was now cleared to

near the midline and there divided in a wedge-shaped manner. Two mattress catgut sutures were inserted through the stump, about three-quarters of an inch from its end, and a series of interrupted catgut sutures was inserted so as to approximate the edges. This resulted in a complete cessation of bleeding. The wound was closed up to a small tube, delivered through the upper end of the incision. Some urinary leakage through the tube began two days after operation; otherwise the patient had an uninterrupted convalescence. The wound healed by first intention except at the site of drainage, whence a slight urinary discharge continued up to the time of dismissal from hospital, three weeks after operation. This discharge ceased within a few weeks.

A communication from the patient, received in June, 1932, stated that he was unable to report personally as he had just started work after being four and a half years idle. He also wrote: "I now feel in the best of health. I have never had a pain nor a day's illness since the operation and feel as strong as ever I felt in my life."

CASE 2.—A woman, aged 28, employed as a carpet-weaver, was referred to the department in December, 1930, complaining of urinary frequency of six months' duration. She required to urinate about every two hours during the day and had to rise once or twice at night.

Chemical examination of the urine was negative. A skiagram of the urinary tract showed a calcareous shadow in the right renal area, which was thought to be a gland. Cystoscopy showed a well-marked trigonitis. The ureteric orifices were normal in appearance and position. A medium blue dye appeared from each ureteric orifice four minutes after an intravenous indigo-carmine injection. Both ureters were catheterised without difficulty and a bilateral pyelogram made (Fig. 2). The pelves were markedly elongated and low, and abutted on the vertebral column. All the calyces except the upper pointed medialwards. The upper ends of the ureters curved outwards from and then inwards to the vertebral column. The calcareous shadow seen in the preliminary skiagram was contiguous with the root of the upper calyx on the right side, and it was decided to explore the right segment.

Operation.—Under a general anæsthetic an extra-peritoneal lumbar incision was made. The upper pole occupied a position only slightly above the level of the iliac crest. The diagnosis of horseshoe kidney was confirmed by tracing an isthmus of parenchymatous tissue from the lower pole across the midline in front of the great vessels. The right ureter was seen to cross the front of the isthmus. A hard nodule was felt on the inner border of the exposed segment, adherent to the upper part of the hilum. An incision was made directly over it, and what proved to be a calcareous gland was removed. A small tube was brought out through the upper end of the incision and the wound closed. Convalescence was uneventful, and the patient left hospital three weeks after operation with the wound closed. When seen in June, 1932, she stated that she was enjoying excellent health. There had been no recurrence of the nocturia since operation, and during the day she could go for four to five hours.

CASE 3.—A man, aged 32, was referred to the department in September, 1931, complaining of pain in the upper lumbar region, more particularly on the left side. The patient was a miner, and his disability, he stated, had started six months previously, following a rack whilst at work. A radiological examination had been made at his local hospital, and a shadow in the left renal area was thought to be a calculus. Intravenous pyelography had also been carried out at the same institution, and the radiologist there had reported "ballooning" of the left shadow and "abnormal outline" of the right.

FIGS. 1 2 3

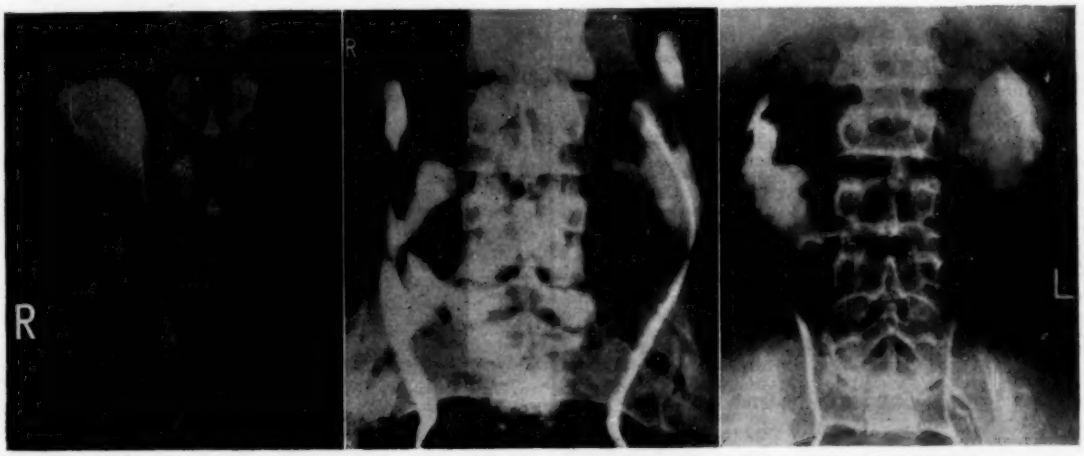


FIG. 1.—Ascending pyelogram of the right kidney of Case 1. The pelvis lies close to the vertebral column, and the lowest calyx, pointing downwards and medialwards, is in apparent contact with a vertebral body.

FIG. 2.—Bilateral ascending pyelogram of Case 2. All the calyces point medialwards, except the upper. Note the calcareous shadow lying lateral to the root of the upper calyx on the right side.

FIG. 3.—Bilateral ascending pyelogram of Case 3. Note how the upper calyces overlap the pelvis on the left side.

Physical examination of the abdomen was negative. Cystoscopy was negative, and both ureteric orifices were normal in appearance and situation. A catheter was passed up each ureter as far as the renal pelvis, without meeting any obstruction, and 15 c.cm. of sodium iodide were injected into each side before any renal uneasiness was produced. The appearance of the pyelogram (Fig. 3) was typical of a horseshoe kidney. The pelves had a bizarre shape and lay close to the midline. The left one was slightly dilated. Most of the calyces pointed medialwards and, in the left segment, the upper calyces were seen to overlap the pelvis. The ureters curved outwards from and then inwards to the vertebral column on each side. No surgical intervention was advised, as it was considered that the symptoms were probably due to the back strain. A communication from the patient in July, 1932, stated that he had resumed light work, but suffered from frequent attacks of excruciating pain across the small of the back.

CASE 4.—A man aged 34, a miner, was referred to the department in December, 1931. His complaint was of urinary frequency and dysuria of three months' duration. He needed to rise about every hour during the night, and during the day was "always going." For three weeks before his examination he had felt a constant ache in the left lumbar region. Since the onset of the symptoms he had lost a stone in weight.

There was tenderness on palpation of the left lumbar region. The urine contained albumin and pus, and tubercle bacilli were identified without difficulty. Plain radioscopy

of the urinary tract was negative. On cystoscopic examination a more or less generalised cystitis was found, and the bladder capacity was reduced to 130 c.cm. The ureteric orifices looked normal. A weak dye appeared at the right ureteric orifice five and a half minutes after an intravenous indigo-carmine injection, and concentrated a minute and a half later. No dye appeared from the left after eight minutes' observation. At a subsequent cystoscopy the right ureter was catheterised one and a half hours after a urea meal, and the secretion from the right kidney collected for urine analysis and for examination of the urea content. No pus cells or tubercle bacilli were found in it, and the urine urea was 2·3 per cent. The examination was completed by making an intravenous pyelogram, using for this 20 c.cm. of uroselectan B. This showed a typical horseshoe kidney appearance. The pelves had peculiar elongated shapes, were situated lower than usual, and the left shadow lay over the transverse processes. On each side some of the calyces pointed downwards and medially. The upper, inner calyces on the left side had a moth-eaten appearance. A diagnosis of tuberculosis in the left segment of a horseshoe kidney was made, and a resection decided on.

Operation was performed under spinal anæsthesia, using 18 c.cm. of percaine. The extraperitoneal lumbar approach was used and the peritoneum reflected towards the midline. The perinephric fat looked healthy, and when it was opened the upper pole was exposed and freed without difficulty. A broad isthmus of parenchymatous tissue was found running in front of the great vessels, and a dilated, hypertrophied left ureter ran anterior to it. The latter was traced downwards to a point about three inches below the level of the isthmus and there divided and ligatured. A true vascular pedicle was found entering the hilum, and was clamped and divided. A small vessel running upwards into the isthmus was also seen and divided.

FIG. 4

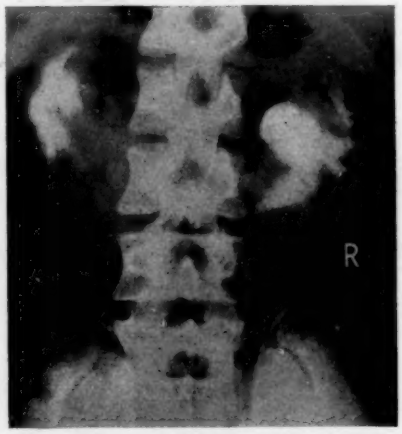
Photograph of the resected segment from Case 4. The upper pole is the seat of a large ulcero-cavernous focus, indicated externally by a large boss. Note the dilated thickened ureter passing in front of the isthmus. Glass rods have been placed in the two vessels passing to the hilum.

It was now easy to free the left segment and the isthmus, and to mobilise the latter to beyond the midline. Here a sulcus was recognised encircling the isthmus. A stay-suture was introduced on its right side; the isthmus was divided through it in a perpendicular manner and the left segment was removed (Fig. 4). There was very little bleeding. Using the stay-suture to overcome the retraction of the isthmus, a mattress-suture of catgut was passed through the stump about half an inch from its end and tied. This effectively controlled the oozing. The edges of the stump were approximated, as well as possible, by a series of six interrupted catgut sutures. The abdominal wound was closed in two layers, a tube being delivered through the upper end. The perfect relaxation obtained by the spinal anæsthetic greatly facilitated the operation, particularly when dealing with the isthmus.

For the first two days after the operation the patient was troubled with flatulence. This was relieved by enemata. The tube was removed on the fourth day. On the eleventh day a purulent, sanguinous discharge appeared at the site of the drainage and, later, the middle portion of the wound broke down. A specimen of urine taken from a 24-hour collection, ten days after operation, was negative for tubercle bacillus, and a guinea-pig killed six weeks after inoculation from the same specimen was negative for tubercle. There was a very quick improvement in the rate of urinary frequency, the patient being able to hold his water for three to four hours within a few days of the operation. He was transferred for a period of sanatorium treatment three weeks after operation, with a purulent discharge still coming from the wound. A report from his doctor in August, 1932, stated that the wound was granulating, but was not quite healed. There was no urinary discharge from it. The frequency was three- or four-hourly during the day, and twice at night.

CASE 5.—A man aged 28, a labourer, was referred to the department in April, 1932, complaining of recurring attacks of left renal pain of nine weeks' duration.

FIG. 5



Intravenous pyelogram of Case 5. The pelvis of the right segment appears more dilated than that of the left, the side of the ureteric calculus.

Chemical examination of the urine was negative, and a preliminary radioscopy of the urinary tract proved negative for calculus. A catheter passed up the left ureter was obstructed at 20 cm., however, and a radiogram taken with the catheter in situ showed a small stone at its tip. Sodium iodide (20 c.cm.) was injected into the renal pelvis without causing any uneasiness, and the resulting pyelogram showed a typical horseshoe kidney appearance, with slight dilatation of the pelvis and clubbing of all the calyces. An intravenous pyelogram (Fig. 5) was later made, using 20 c.cm. of uroselectan B. This pyelogram confirmed the diagnosis of a horseshoe anomaly, but showed a greater degree of dilatation in the right pelvis than in the left.

Operation.—Under spinal anæsthesia (percaine 14 c.cm.) an extraperitoneal exposure was made through a curved lumbar incision. The isthmus was seen to consist of thick parenchymatous tissue. The ureter lay anterior, and a stone could be felt within it, about an inch below the lower border. The renal pelvis was seen to be slightly dilated. The stone was removed through a small vertical incision in the ureter, which was then closed by two Lembert-like catgut sutures. A small drainage-tube was brought out through the lower end of the lumbar wound. There was no urinary leakage and the tube was removed on the second day. The patient was dismissed to the convalescent home on the twelfth post-operative day, with the wound completely healed.

DIAGNOSIS

In the presence of renal disease requiring operative intervention, the pre-operative knowledge of the existence of a horseshoe anomaly is a tremendous advantage, particularly in approach. To those experienced in the interpretation of pyelograms, diagnosis should, in most cases, be easy. The only other condition familiar to me which might give rise to confusion is an anomaly of rotation. When this occurs in an excessive degree, the convex border is mesial and the pelvis faces laterally. The pyelogram of such a kidney would show the calyces directed

towards the spinal column. As, however, both kidneys are not usually rotated, the pyelogram of the partner kidney would be likely to have a normal appearance. The important diagnostic features of a horseshoe kidney pyelogram are as follows:—

(*a*) The shadow lies closer to the midline than in the normal, and is usually lower.
(*b*) The pelvis and calyces are of a bizarre shape.
(*c*) One or more of the calyces on each side points towards the midline or downwards, and some of the calyces may overlap the shadow of the pelvis.
(*d*) The upper end of the ureter curves outwards from and then inwards to the vertebral column.

Pyelography is the only reliable diagnostic method. A plain radioscopy might be suggestive by indicating a loss of outline of the psoas shadow, and failing to visualise one or other of the renal poles. There is no syndrome of symptoms and signs characteristic of horseshoe kidney.

SURGICAL TECHNIQUE

Diseases involving a horseshoe kidney should be treated in the same manner as similar diseases in kidneys normally formed. If resection of the affected segment is necessary this involves cutting through the isthmus, which is usually composed of parenchymatous tissue. Most urologists agree that the extraperitoneal lumbar approach is preferable to the abdominal route. By this method there is less likelihood of infecting the peritoneum, especially when dealing with a tuberculous or suppurative lesion, or when there is a possibility of urinary leakage after the operation. It is my custom to make an incision starting about an inch below the costovertebral angle. This is carried downwards and slightly forwards to a point about midway in the costo-iliac space, whence it is made to pass forwards parallel with the iliac crest. The muscles and fasciæ are divided in the line of the incision, which can be prolonged as far towards the midline as seems necessary to give a free exposure of the isthmus. The complete muscular relaxation obtained by spinal anæsthesia greatly facilitates the access. Methods of dealing with the isthmus have been described under Cases 1 and 4, in which resections were carried out.

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STARCH FERMENTATION BY THE "GRAVIS" TYPE OF DIPHTHERIA

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In a report on diphtheria types published in The Lancet Wright and Rankin [1] refer to difficulties they have met with in detecting the fermentation of starch by diphtheria bacilli. One of the general conclusions suggested by their paper is that "gravis" strains of the diphtheria bacillus are either absent or very rare in the Edinburgh area. Inasmuch, however, as they do not state definitely whether the gravis strains which they had received from Leeds did or did not ferment starch in their hands, the general impression left by their paper is far from clear.

They maintain that filtered solutions of starch should be used for fermentation tests because starch is readily hydrolysed when its solutions are heated for the purpose of sterilisation. Our own experience has been entirely at variance with this finding. But in view of this statement it seemed desirable to re-examine the behaviour of starch solutions when heated in a variety of ways.

In the work already published (Anderson, Happold, McLeod, and Thomson [2]) on this subject, the method invariably used has been to add sterile autoclaved 5 per cent. solution of British Drug Houses soluble starch to serum peptone water previously sterilised by repeated steaming at 100° C., in amount necessary to bring the final concentration of starch in the medium to 1 per cent. Latterly [3] we have often worked with serum peptone water in which the starch solution was incorporated before commencing the sterilisation by intermittent heating. Such media have never shown any acid reaction when the types of diphtheria bacilli described as "mitis" or "intermediate" are grown in them for a week or more, and inasmuch as both these types of strain attack maltose, which is one of the products of hydrolysis of starch, it scarcely seemed likely that any appreciable hydrolysis of the starch was taking place under the conditions described.

OBSERVATIONS ON FERMENTATION

The point, however, has been raised, and is important for the differentiation of gravis strains. Results obtained both before and after the publication of Wright and Rankin's paper are the following:—

Fermentation of starches of different origin.—The following products were used: (B.D.H.) maize, wheat, potato, and rice starches. These were dissolved in boiling water, autoclaved at 115° C. for 20 minutes as 5 per cent. solutions, and then added in the required amount to serum peptone water (pH 7·8) previously sterilised by intermittent steaming. Four strains previously determined to be starch-fermenting, and eight non-starch-fermenting strains were grown on all four products. All four gravis strains fermented all the specimens of starch with clotting of the proteins of the serum peptone water within 36 hours; whereas none of the other strains had produced any change of reaction after a week's incubation.

Effect of heat sterilisation at different reactions.—One per cent. solutions of starch in 0·1 per cent. Na_2HPO_4 and 1 per cent. peptone of the following reactions, pH 6·0, 7·2, 7·5, and 8·2 were prepared; these were autoclaved for 20 minutes at 115° C. These media, after the necessary adjustments of reaction, were tested for growth and fermentation with various diphtheria strains. No change in the fermentative effects exerted by gravis and other diphtheria strains was observed. This was equally the case when heated serum was added to produce freer growth of the bacteria.

The detection of the products of hydrolysis in complex media by chemical methods cannot readily be made a very delicate observation owing to the reducing action of some component of the peptone; but we failed to find any difference between tubes with and those without starch. Further, the examination of an autoclaved aqueous 5 per cent. solution of starch by Fehling's and Benedict's methods gave no evidence of hydrolysis. If, however, unheated serum is added to any one of these starch-containing media, and it is then inoculated with diphtheria bacilli and

incubated, it is found that all types of strain produce fermentation. The starch is split by the diastase of the serum on incubation at 37° C., and the mitis and intermediate types of diphtheria bacilli which cannot attack unaltered starch readily produce acid from the products of its hydrolysis.

We must therefore say that we are completely at a loss to understand the difficulty in determining starch fermentation which Wright and Rankin describe. The only three likely sources of error which we have been able to determine are :—

(1) The addition of unheated serum to the medium.
(2) The use of a soluble starch in which the treatment with acid has been carried too far, and resulted in partial hydrolysis.
(3) The use of fluid media with a basis of meat extract, since all diphtheria bacilli can split acid from some of the compounds in meat extract.

The media recommended in our original paper fulfil the two essential requirements—free growth of the bacilli and constant reaction in the absence of added fermentable substance.

TYPE OF ORGANISM AND CLINICAL FINDINGS

A general summary of the views which we advanced a year ago and of the criticisms of these views recently brought forward appeared as an annotation in the same issue of THE LANCET as Wright and Rankin's paper. Without doubt the classification of diphtheria bacilli along the lines which we have suggested must be established ultimately on the corroboration of those findings by other workers, and in other places.

We believe, however, that it is a mistake to suggest that the only evidence available in favour of this conception is that obtained in Leeds.

From the papers of Parish, Whatley, and O'Brien,[4] and of Wright and Rankin, and from our own observations, it appears that gravis infections have played an important part—i.e., have been the most frequent type of infection in Berlin, Frankfort, Cork, Hull, and Leeds, in all of which places diphtheria has recently been severe and in some cases remarkably formidable; whereas in London, Scotland, and Copenhagen, where starch-fermenting strains are rare, diphtheria has been relatively mild. The case death-rate in the centres where gravis infections have been common has fluctuated between 8 per cent. and 20 per cent.; whereas in those areas where they are uncommon no case death-rates exceeding 6 per cent. have been recorded recently.

It is rather too readily assumed that severe outbreaks of diphtheria may be explained away on the ground of insufficient or tardy serum therapy. It may be that here and there an unusually high death-rate from diphtheria can be explained in this way, but it seems to us altogether improbable that this will be the explanation of a high death-rate persisting over a considerable period in a community of some size. The whole tendency is in the other direction, for there is an unusual atmosphere of alarm in connexion with inflammations of the throat, and many practitioners send suspected cases of diphtheria to the fever hospital without waiting for a bacteriological report.

The following figures, based on the experience of diphtheria in Leeds, illustrate this point. In 1928 diphtheria was mild, mortality 3·3 per cent.; in 1931 it was severe, mortality 9·2 per cent.; and the following Tables are compiled from the records of the Leeds City Hospital. Table I. shows the duration of the illness before antitoxin treatment was commenced.

It is commonly assumed that when antitoxin treatment is commenced *within* 96 hours of the onset, there is a reasonable chance of recovery. The average duration of illness before the administration of antitoxin in fatal cases was 4·1 days in 1928 and 3·0 days in 1931.

TABLE I

Duration of illness before commencement of antitoxin treatment.	Percentage of all cases.			
	1928.		1931.	
Under 24 hours	2·7		4·4	
24 hours – 48 hours	21·6	67·5	23·3	75·2
48 „ – 72 „	23·2		27·9	
72 „ – 96 „	20·0		19·6	
Over 96 hours	32·5		24·8	

The proportion of early to late deaths in diphtheria in the two years is given in Table II.

TABLE II

Duration of illness before commencement of antitoxin treatment.	Percentage of deaths.	
	1928.	1931.
Under 96 hours	46·1	68·2
Over 96 „	53·9	31·8

SIGNIFICANCE OF THE LEEDS FINDINGS

There is a tendency on the part of those who criticise the differentiation of gravis and mitis types of the diphtheria bacillus to assume that the finding of a number of fatal cases of mitis infection on the one hand, and of mild gravis infections on the other, disposes of the claim which we have put forward. It is desirable, therefore, to state afresh what we consider to be the significance of the findings which we have made in Leeds.

For the last two years the form of diphtheria bacillus predominant in Leeds has been a starch-fermenting form, growing with marked pellicle formation and coarse granular deposit in broth, and the results of serum treatment in cases due to this type of bacillus have been disappointing. Examination of diphtheria strains, 46 obtained from Berlin, and 1, described as the only form occurring in Posen, has shown that in these areas also the gravis type of diphtheria bacillus is common. It has been assumed, therefore, as probable that this is the type of diphtheria bacillus specially responsible for the very grave epidemics of diphtheria so resistant to serum treatment that have been reported from the continent of Europe during the last three or four years. By contrast, the next most numerous type of diphtheria bacillus in Leeds, which is a non-starch-fermenter, grows abundantly on the usual bacteriological media, and produces a uniform and usually copious turbidity in broth, has not till now in our experience produced death in any case which has been admitted to hospital soon enough to receive serum treatment. It has been assumed as probable that the findings in Leeds, as far as the contrast between the gravis and mitis types of diphtheria are concerned, would prove to be of general application.* That assumption is not invalidated by determining that (*a*) in some areas the bacteriology of diphtheria is quite different from that

* It is scarcely likely that no death in 100 cases of serum-treated mitis infection will often be recorded as it has been in Leeds—this is probably exceptional. We do expect, however, that a low death-rate will prove to be the rule in the mitis type of infection.

in Leeds—e.g., that the intermediate form present to the extent of 5 per cent. in Leeds is the most numerous type in Glasgow; nor that (*b*) some mitis infections coming under treatment *late* in the disease have died, as, for instance, those quoted in the Edinburgh paper.

Extensive investigations of diphtheria along the lines of the classification which we have suggested are now in progress in several centres outside Leeds, and a more convincing verdict on this subject should result. Meanwhile, however, it has seemed desirable to us to state that we see no reason at present to modify the main conclusions already published on this subject.

Throughout Yorkshire infections with the gravis bacillus are now common, and often extremely formidable, and although there is no immediate prospect of a serum therapy better adapted to these infections, we would emphasise that the nasal carriers appear to be very important agents in spreading such infections, and might well be more effectively controlled than they are at present. Rapid discrimination between the gravis strains and other diphtheroid bacilli of the nose is considerably facilitated by the use of the medium which we have introduced.

We have pleasure in thanking the Medical Research Council for a grant for expenses, and also for a personal grant made to two of us.

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ANÆSTHESIA IN TROPICAL SURGERY

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THE difficulty of obtaining good general anæsthesia for surgical operations has always been one of the constant trials of medical work in the tropics. This difficulty is particularly marked in a country such as the Anglo-Egyptian Sudan, in which there are great variations of temperature and humidity, a shortage of experienced medical staff, and a backward and primitive race supplying the majority of the patients. There is, amongst native Sudanese patients, an almost universal dread of losing consciousness under an anæsthetic, a dread compounded of fear of the unknown and a belief that the soul actually leaves the body and may have difficulty in finding it again. There is sometimes also a tincture of doubt as to what mutilation may be in store for the unconscious and helpless patient. The relief with which the information that an operation can be performed without loss of consciousness and without pain is received by such patients contributes greatly to that hopeful outlook which is of such enormous value in the treatment of the African native.

The technical, as apart from the psychological, difficulties of general anæsthesia may be summarised as follows:—

Chloroform, the most dependable of available anæsthetics, is nevertheless dangerous in unskilled hands, and few native medical officers become really dependable in its use. Further, its toxic effect in prolonged anæsthesia is a very real danger, particularly in view of the commonness of hepatic and renal deficiencies in tropical patients.

Ether is very unreliable owing to the great variation in its rate of evaporation following atmospheric changes. It loses bulk rapidly in hot weather, and is apt to explode. Its use needs considerable skill, especially when in combination with chloroform, for the relative strength of the two drugs is continually changing as the ether evaporates. Closed ether appliances seldom survive the climate for more than a few months, on account of the loss of elasticity of the rubber bags or connexions. Ether readily causes bronchial irritation in hot, dry weather. The most useful mode of administration is by the rectum mixed with olive oil.

Nitrous oxide.—Both nitrous oxide and oxygen are impossibly expensive, as they have to be obtained from Europe, and the cylinders lose half their contents in transit.

Ethyl chloride is definitely dangerous unless given in measured quantity from a rubber bag, which rapidly loses elasticity.

Avertin has the very grave objection that skilled attention is needed for at least half an hour before operation, and often for 24 hours after it. It is therefore almost ruled out as a routine anæsthetic in the primitive conditions of nursing found in most parts of this country.

The solution of many of these difficulties has been found to lie in the increasing use of local and spinal anæsthesia; the following are the most striking of the many advantages.

(1) The minimum of shock with the maximum of relaxation.

(2) The almost complete absence of post-anæsthetic vomiting. This is of great value both from a physical and a psychological aspect. The patient usually sleeps well, and can take fluids and solid diet much earlier than after general anæsthesia.

(3) Preparatory and after-treatment are simplified. Many cases can be admitted and sent home on the day of operation, thus economising beds.

(4) One skilled assistant the less is needed.

(5) The coöperation of the patient during the operation is often of great assistance—e.g., a timely cough in locating a hernial sac and the movement of fingers in a tendon suture.

These advantages are, of course, familiar to all surgeons, but work at a distance from the refinements of skilled assistance and nursing lends them such added value as to warrant the emphasis used.

SPINAL ANÆSTHESIA IN ABDOMINAL OPERATIONS

Spinal anæsthesia is the anæsthesia of choice for major abdominal operations on patients who are not profoundly shocked, cachectic, or very old; in other words, for those who are reasonably good "risks," and can tolerate the inevitable drop in blood pressure. After considerable experience of stovaine, novocain, and spinocaine, we have found neocaine, given by the method described by Koster and Kasman,[1] the most reliable. Over 200 operations have been done under this anæsthetic in the Khartoum and Omdurman Hospitals without any untoward event referable to the drug, and with uniformly satisfactory results. Briefly, the method used is as follows:—

After a preliminary injection of morphia, the interval between the first and second, or second and third lumbar vertebræ is punctured with a fine needle and a quantity of cerebro-spinal fluid is drawn off and mixed with the crystalline neocaine in the glass ampoule in which it is supplied. The solution is then injected slowly through the needle which has been left in place.

For an adult of average weight: 10 mg. of neocaine in 4 c.cm. of fluid give anæsthesia up to the umbilicus; 15 mg. of neocaine in 6 c.cm. of fluid give anæsthesia up to the costal margin; 20 mg. of neocaine in 8 c.cm. of fluid give anæsthesia up to the clavicle.

Immediately after injection the patient is placed in the Trendelenburg position to counteract the cerebral anæmia which follows the invariable drop in blood pressure, and the operation may start within five minutes. Complete anæsthesia lasts for about

[1] Koster, H., and Kasman, L. P.: Surg., Gyn., and Obst., 1929, lix., 6.

an hour; if the operation is not completed within this time, novocain may be injected into the peritoneal edges, or a little chloroform given. If there is nausea or retching the head of the table is still further lowered and, if they persist, ephedrine is injected, though this is not often needed. After return to the ward, the head should be kept low until the pulse has recovered its volume. No cases of headache have occurred in this series. This is attributed to the use of a fine needle. The following case illustrates some of the advantages of this form of anæsthetic.

A male native, aged 35, was admitted with a history of sudden onset two hours previously of epigastric pain of an agonising character, with vomiting and collapse. For two years previously there had been intermittent pain when the stomach was empty. There was board-like rigidity of the upper abdomen, a subnormal temperature, and a pulse-rate of 80, the ulse being of fair volume.

A preparatory injection of morphia, gr. ¼, had little effect upon the pain, but 15 mg. of neocaine in 6 c.cm. of cerebro-spinal fluid intrathecally produced complete relief from pain and a flaccid abdomen in five minutes. The patient retched once or twice while the abdomen was being opened, but subsequently went to sleep; a perforation in the posterior wall of the duodenum was closed, and a gastro-jejunostomy was performed under advantageous circumstances. Except for some paralytic ileus on the second and third days, the patient made an uneventful recovery.

A constant feature in abdominal cases thus anæsthetised is the contracted state of the intestines (except where there is paralytic or obstructive ileus); the abdominal contents not required can be packed away with ease, thus facilitating intra-abdominal manipulations.

LOCAL ANÆSTHESIA IN ABDOMINAL OPERATIONS

In abdominal work local anæsthesia is most useful: (1) in operations not entailing much handling of viscera—e.g., straightforward appendicectomies, colostomy, ventral hernia; (2) in cases where, owing to shock or debility, the patient is a doubtful risk under spinal or local anæsthesia; and (3) in infants. The technique, in outline, consists in:—

(1) Infiltrating the line of the incision by sub- or intracuticular injection of 1 per cent. novocain, made up with fresh adrenaline, 5 drops to the fluid ounce.

(2) Blocking the cutaneous nerves by a zone of infiltration into the muscle layers, particularly in the neighbourhood of the nerves (intercostal, ilio-hypogastric, ilio-inguinal).

(3) Anæsthetising the peritoneum. This is best done after exposure of the transversalis fascia, or posterior sheath of the rectus, when novocain can be injected beneath it, in contact with the peritoneum.

Novocain injected into the mesentery will usually relieve pain due to manipulation of viscera.

The quantity required is usually between 1 and 2 fluid ounces of the 1 per cent. solution, but more can be used without danger provided that: fresh, unboiled adrenaline solution is added in the strength mentioned; and care is taken that no appreciable quantity is injected directly into a vein.

A native boy of 9 was admitted with a history of colicky pain in the abdomen, beginning with vomiting 12 hours previously. Examination showed a tumour just above the umbilicus and visible small gut peristalsis. There was fæcal vomiting and collapse. After an injection of morphia and local infiltration with 1 per cent. novocain, a right paramedian incision allowed a 12-in. intussusception of the jejunum to be delivered and reduced by manipulation. The intussusception had started at a tumour of the gut wall the size of a walnut; this (a lymphosarcoma) was resected, and an end-to-end anastomosis was done at a subsequent operation under a spinal anæsthetic.

GENERAL OPERATIONS

The following notes indicate the general lines of the procedure used.

Abscess.—Many of the smaller types of abscess, and particularly cold abscesses, can be opened almost painlessly through an incision previously injected intracutaneously with 1 per cent. novocain. Subcutaneous injections should not be used, as the solution will either enter the abscess cavity, where it will be ineffective, or will be forced into the surrounding zone of hyperæmia, where introduction will be painful and possibly dangerous.

Amputations.—The fingers and toes are easily removed after encircling them with a band of hypodermic injection, a little novocain being introduced more deeply over the line of the nerves. The same method serves for removing ingrowing toe-nails and for opening whitlows, but in the latter case care should be taken not to cause venous congestion by injecting too much of the solution, or pain will result.

For amputating limbs, in addition to the encircling subcutaneous injection, the nerves must be blocked by injecting a considerable quantity of novocain into their neighbourhood or, where practicable (as in the upper arm), by exposing them and injecting the trunks under direct vision. This method is extremely valuable in the emergency amputation of crushed limbs.

Inguinal hernia.—Hernia offers one of the easiest and most useful opportunities for local anæsthesia. After subcutaneous or intracuticular injection of the line of incision, the needle is introduced at a point about 2 cm. internal to the anterior superior spine and is carried deep to the fascia of the external oblique, and the ilio-inguinal and ilio-hypogastric nerves are blocked with 4 or 5 c.cm. of anæsthetic. Deep injections can then be made round the internal ring, to anæsthetise the peritoneum and cord, or the neck of the sac and genital branch of the genito-crural nerve can be injected after the inguinal canal has been opened.

Hydrocele and varicocele.—These are easily dealt with by (1) injecting the line of incision as described, and (2) blocking the genital branch of the genito-crural and sympathetic nerves by picking up the cord between the fingers and introducing 3 or 4 c.cm. of solution into it.

Tumours of the lower jaw and tongue.—Local anæsthesia here has the enormous advantage of the collaboration of the patient in spitting up blood which would otherwise find its way into the lungs. A preliminary tracheotomy is unnecessary, and the anæsthetist's intrusions are obviated. For the lower jaw one or both inferior dental nerves are blocked by injection of 3 or 4 c.cm. of novocain into the neighbourhood of the nerves as they lie near the lingula on the inner surface of the mandible, the needle being introduced in line with the opposite canine and following the plane of the biting surface of the teeth until the lingula is felt. A hypodermic encircling injection is then made into the face, enclosing the area of the operation.

Hemi-section of the tongue.—This can conveniently be carried out, if the anterior two-thirds only are involved, by blocking both inferior dental nerves as described above, and also the lingual nerves as they lie on the floor of the mouth.

Madura.—The use of local anæsthesia should be confined to the removal of very small early madura, which can be encircled by a hypodermic injection without risk of penetrating the growth. If the injection penetrates, as it easily may in larger growths, the consequent œdema makes differentiation difficult. The larger growths also need a bloodless field only obtainable with a tourniquet, for which general or spinal anæsthesia is necessary.

Skin grafts.—Thiersch grafts are conveniently cut by encircling the area from which the graft is to be taken with a weal of subcuticular injection of 1 per cent. novocain.

A native man, 50 years of age, entered hospital with a tumour of three months' duration projecting from the external surface of the left mandible. There was an indurated ulcer on the external alveolus opposite the premolars, and the submaxillary lymphatic glands were enlarged but soft. After removal of the teeth, morphia and hyoscine were injected and the left inferior dental nerve blocked inside the mouth with 5 c.cm. of 1 per cent. novocain. A line of subcuticular injection of the same solution was next described round the tumour, and carried forward to the symphysis mentis. Through an incision carried back from the angle of the mouth, and dividing to include the skin adherent to the tumour, the whole mass, together with the body of the mandible from the symphysis to the angle, was removed in one piece. The divided skin and mucosa were sutured. Healing occurred by first intention, and the glands gradually subsided. The growth proved to be an epithelioma invading the bone.

SPINAL ANÆSTHESIA IN GENITO-URINARY OPERATIONS

Spinal anæsthesia is of inestimable value in *suprapubic prostatectomy* on account of (*a*) the excellent relaxation, (*b*) the absence of shock and toxic action on the kidneys, and (*c*) the almost total absence of hæmorrhage due to the fall in blood pressure. If the removal is not done under direct vision and the prostate bed sutured, care must be taken that reactionary hæmorrhage does not follow the rise in blood pressure some hours after operation. In many cases it is advisable to anticipate this by exerting pressure on the prostate bed by means of a hæmostatic bag or gauze plug attached to a catheter in the urethra to which a weight can be suspended.

LOCAL ANÆSTHESIA IN GENITO-URINARY OPERATIONS

Ligature of hæmorrhoids.—Piles can be satisfactorily ligated under local anæsthesia, which gives better relaxation of the sphincter than even deep general anæsthesia; the relaxation appears to last longer with the former method, thus giving freedom from pain after operation. The anus is first encircled by a weal of subcutaneous 1 per cent. novocain. One finger is then placed in the anal canal, and under its direction a needle is passed, at intervals of about 2 cm., deeply into the sphincters and under the anal mucosa, 2 c.cm. being injected at each spot. The needle point should be kept moving so as to avoid injecting into the veins. After a few minutes the sphincter will be found relaxed, and the operation can proceed.

Suprapubic cystotomy.—Either for the removal of calculi, or as a preliminary to prostatectomy, suprapubic cystotomy is easily performed under local anæsthesia provided that novocain can be injected via the urethra. It is particularly useful in the case so often already on the edge of uræmia, in which there has been long-standing prostatic obstruction. Ten to twenty cubic centimetres of 5 per cent. novocain with two drops of adrenaline are first injected into the bladder with an ordinary urethral syringe, the bulbar urethra being massaged to pass the solution upwards. A hypodermic weal is next formed along the line of the suprapubic incision with 1 per cent. novocain, a little being also introduced beneath the rectus sheath. The bladder is then exposed in the usual way, a further injection being made into the thickness of its wall before it is opened. If the peritoneum has to be stripped up, as is sometimes the case in contracted bladders, it should first be infiltrated with novocain.

Fistula in ano.—This is treated as for hæmorrhoids.

LOCAL ANÆSTHESIA IN EYE, NOSE, AND THROAT OPERATIONS

Many operations on eye, nose, and throat are so commonly performed under a local anæsthetic that no comments are needed. The following, however, may be less familiar.

Trichiasis.—The operation of splitting the inverted lid margin and tarsal plate and inserting into the cleft an epithelial graft from the lip can be done under local anæsthesia as follows. The conjunctival sac is anæsthetised by instillation of cocaine drops at half-hourly intervals thrice in the ward, morphia being given with the third. On the table, the lid affected is injected with 2–3 c.cm. of 1 per cent. novocain, a little being also introduced with a fine needle into the conjunctiva of the under side of the lid. The lip which is to provide the graft will also need an injection of 2 or 3 c.cm.

Enucleation of the eye.—This can be done painlessly by injecting 1 or 2 c.cm. of 1 per cent. novocain to the neighbourhood of the otic ganglion, the needle being passed inwards along the outer wall of the orbit for a distance of 2 cm. and then a little towards the nasal side. A little solid cocaine may also be placed in the conjunctival sac and, if there is blepharospasm, the lids should be injected with novocain.

CONCLUSIONS

It is emphasised that no originality is claimed for any of the procedures or technique described, all of which are fully described in text-books of local anæsthesia. Of these, the writer has found Farr's [2] to be the most useful. The intention has been to give a brief account of the type of case found most suitable for spinal and local anæsthesia in a general surgical practice in the tropics.

I wish to acknowledge the courtesy of the director of the Sudan Medical Service in allowing me to publish this paper.

FAMILIAL HEPATOMEGALY OF UNCERTAIN PATHOLOGY

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The following report of a case of hepatomegaly in a child embodies certain clinical and pathological data, not previously recorded in this country, and for which we were long unable to find any adequate explanation. A recent search of foreign literature has revealed, however, two cases which have somewhat similar pictures; an abstract of one of these is appended.

Our patient was a boy, aged 6 years, who was admitted into the Queen's Hospital for Children on Feb. 16th, 1931, for cough, breathlessness, and abdominal pain.

History of the Case.—The mother had first noticed some enlargement of the abdomen at the age of 1 year and 3 months and since that date the child had been almost constantly in hospital. Various diagnoses appear to have been made, such as enlarged liver and spleen, cirrhosis of the liver, and, finally, while under the care of one of us at the Queen's Hospital, he was shown at the section for the study of

[2] Farr, R. E.: Practical Local Anæsthesia, London, 2nd ed., 1930.

diseases of children of the Royal Society of Medicine in April, 1931, as a case of Gaucher's disease. This last diagnosis was founded on the recovery of tissue pulp, containing large clear cells, from what was thought to be splenic puncture, but which in reality was obtained by puncture of an enormously enlarged left lobe of the liver. The pitted scar following this operation was visible at the post-mortem.

Hæmatemesis and epistaxis were recorded as having occurred prior to admission to other hospitals, but these were not noticed during the ten months that the patient spent in the Queen's Hospital. There had never been any jaundice, but cough and breathlessness had been a marked and increasing symptom for two years. More recently the cough had been very severe, and was accompanied by a profuse and fœtid expectoration.

Clinical Notes.—On admission to hospital this child presented a curious facial appearance, and bodily development, which is well shown in the accompanying photograph (Fig. 1). He was undersized—height 3 ft., weight 2 st. 6 lb. The head was abnormally large, the face fat and flabby. The abdomen was enormously distended, while the rest of the trunk and limbs were poorly covered. The muscular development of the lower limbs was particularly poor, and there was marked knock-knee and flat-foot. The skin of face, trunk, and limbs was pigmented a deep brown; the hands and feet were a dark ashy grey colour. This pigmentation steadily increased, so that shortly before death the boy resembled a mulatto. There was a profuse growth of hair on the head and on the trunk and the back, and the limbs were covered with a fine downy hair. Mental development was considerably retarded; speech was limited and defective. Jaundice was absent, and stools and urine were normal. There was some clubbing of the fingers, but this could be explained by the presence of an advanced fibrosis and bronchiectasis affecting both lower lobes. The child was subject to violent and paroxysmal attacks of coughing in which large quantities of fœtid sputum were expectorated.

The abdomen was prominent and hard. The liver was greatly enlarged, the liver border reaching to the crest of the ilium on the right side and passing thence obliquely upwards to the left to merge with what was thought to be a large spleen. This apparent splenic enlargement filled the whole of the left hypochondrium, and extended thence downwards and forwards to just below the level of the umbilicus. Its antero-internal border appeared to present a typical splenic notch. Dullness was continuous upwards into the left axilla to the level of the nipple. This presumed enlargement of the spleen was shown at autopsy to be a greatly enlarged left lobe of the liver. The surface of the liver was smooth, the edge hard. There was no ascites.

The stools on admission were a little loose and pale, but later showed no abnormal characteristics, and the fat content was normal. Neither kidney was palpable, and the urine was clear, contained no albumin, no sugar, no casts, and was free from bile. The usual physical signs of an advanced fibrosis and bronchiectasis were present in the lungs, and occasional exacerbation of a pneumonic character appeared to take place, so that at the end the major part of the right lung was affected in addition to the left lower lobe.

The heart presented no abnormal features; the blood pressure was 110 systolic. The blood count, which was done on several occasions, gave the following readings respectively on Feb. 22nd and April 24th, 1931:—

R.B.C. ..	3,540,000	R.B.C.	3,970,000
W.B.C. ..	.. 15,733	W.B.C.	.. 20,400
Hb.	.. 77%	Hb.	.. 51%
Differential—		Differential—	
Polymorphs	.. 40%	Polymorphs ..	.. 39%
Lymphocytes	.. 52%	Lymphocytes..	.. 50%
Hyaline ..	.. 8%	Large mononuclear	.. 4%
		Mast cells ..	.. 2%
Megaloblasts	.. 8%	Myelocytes ..	.. 5%
		Two megaloblasts	

The blood-urea was 18 mg. per cent.; blood-sugar, 95 mg. per cent.; blood cholesterol, 220 mg. per cent.; van den Bergh, direct and indirect, was negative; Wassermann, negative; fragility of red cells, normal.

On Dec. 27th, 1931, the patient, while coughing, was seized with violent abdominal pain, and collapsed and died.

POST-MORTEM FINDINGS

The *abdomen* contains about 6 oz. of clear yellow fluid. The cavity is almost completely filled by the liver, which descends to the pelvic brim on the right side, and to within two inches of it on the left side. It weighs 2500 g. It is nowhere adherent. The normal division into lobes is preserved. It is smooth, firm, pale buff in colour. Its edges are well-defined. Its consistency is that of hard rubber. On incision, the cut surface is smooth, homogeneous, very dense, and somewhat translucent. On close inspection some very minute pale yellow areas are seen to be distributed evenly throughout. The portal tracts appear collapsed, no dilatation of ducts observed. The gall-bladder looks normal and contains about a drachm of viscid bile. Test for amyloid disease negative. The *spleen* weighs 75 g. Its capsule is shrunken, and the splenic pulp is rather soft and vascular. The cut surface is homogeneous. *Kidneys* are congested and slightly enlarged, suprarenals normal. The pancreas is normal.

Thorax: Heart dilated and fixed by adhesions to the right and left pleura. *Lungs* show fibrosis and bronchiectasis. No normal lung tissue to be seen. An abscess cavity is present in the lower part of the left upper lobe. Radiating from the hila are clusters of soft enlarged glands which penetrate the lung tissue for a considerable distance and appear to surround the bronchioles in their finer ramifications. From the hila these can be traced up the lateral aspect of the œsophagus and trachea as far as the thyroid gland. In appearance they resemble hæmolymph glands.

Sections of the liver stained by hæmatoxylin and van Giesen show under low power a structure very unlike the normal. Division into lobes and lobules is ill-defined, especially at the periphery, due to the invasion of the liver parenchyma by fine strands of connective tissue. There is a condensation of connective tissue in the portal areas with consequent compression of the smaller ducts, but no pericellular invasion by connective tissue. There is some cellular reaction in the portal spaces.

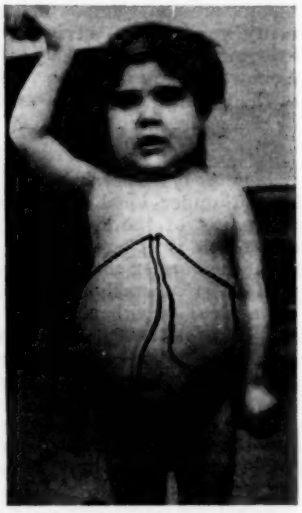
Under the high power (Fig. 2) the most striking features of the sections are: (1) the emptiness of the individual liver cells; (2) their increase in size—sometimes to two or three times the normal; (3) the preservation of the nucleus in most cells; (4) the increase in connective tissue in the region of the portal spaces; (5) the grouping of cells, in groups of 4 to 20, by fine connective tissue strands. Occasionally an area is seen where clusters of liver cells appear to contain a trace of protoplasm staining brown. The nucleus, in many cells, is represented by its nuclear membrane only.

In sections stained by Sharlach R most of the cells appear empty. Sharlach-positive material is present in some of the cells, and a considerable amount of neutral fat in the portal spaces. The substance in the liver cells consists of some material which is neither fat nor lipoid, and is not doubly refractile.

Sections stained by Bielchowsky's method failed to demonstrate the presence of a stroma, such as is seen in the cells in Gaucher's disease. This is interesting in view of the clinical diagnosis previously arrived at.

Sections stained for glycogen were negative. This was to be expected, owing to the rapidity with which glycogen disappears from the tissues after death and, unfortunately, alcohol was not used as a fixative.

FIG. 1



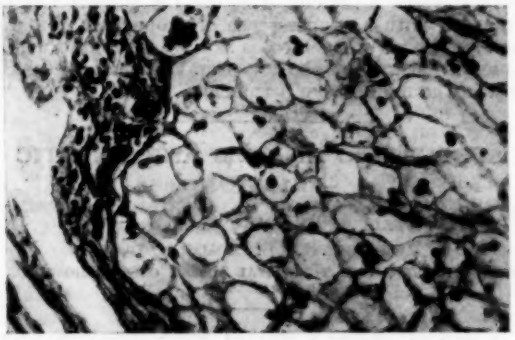
Photograph of child reproduced from Proc. Roy. Soc. Med. (1931, xxiv., 1031), where the case was reported by Dr. W. C. Hartston. At this time, as the marking shows, the swelling on the left was regarded as the spleen.

Chemical Examination of the Liver.—The dried material gave on analysis: ether extract, 1·202 per cent. of dry matter. The extract contained: free cholesterol, 0·728 per cent., which is within normal limits, but on the low side; cholesterol esters, 0·060 per cent., which is much below normal; fat and fatty acids, 0·414 per cent.

An inquiry into the family history showed that mother and father were presumably healthy. There were two other children, one an infant, alive, to whom we have been unable to get access, and the second, a girl, who also had a very enlarged liver, and who died of a terminal pneumonia at the age of 1 year and 8 months at Whipps Cross Hospital. The superintendent informs us that she was a thin rickety infant, suffering from diarrhœa and

occasional vomiting. At the post-mortem the spleen was found to be only very slightly enlarged, but the liver was enormous, weighing 2 lb. 10 oz. The liver is described as having no typical parenchyma, and being in a state of extreme fatty degeneration. The similarity of this case to that of her brother, our patient, suggests that the condition may be familial in character.

FIG. 2



Microscopic appearance of liver section showing enlarged cells. (×165.)

SUMMARY

The outstanding and unique features of this case appear to be: (1) the familial character; (2) the pigmentation of the body; (3) the absence of any insufficiency of hepatic function during life; (4) the naked-eye appearances of the liver in respect of size, colour, consistency, and entire absence of any resemblance on section to normal liver; (5) the abnormal histological character of the liver cells themselves.

A search through the literature of familial hepatomegaly reveals the fact that the case is of very great rarity. A similar one was described by E. von Gierke under the title of "Hepato-Nephromegalia glykogenica."[1] A child, aged 8, with considerable enlargement of the liver and a tendency to nose bleeding, who had had rickets, died of laryngitis. Post-mortem examination showed an enormously enlarged liver (2000 g.), and kidneys (245 g.), in addition to acute pulmonary changes. Microscopical examination showed that the cause of the hepatic and renal enlargement was an intense overloading of the parenchymatous cells with glycogen. Extract of the liver contained 1·60 per cent. free sugar and 10·43 per cent. glycogen. The dried substance contained 4·95 per cent. free sugar and 33·70 per cent. combined sugar. Extract of kidney contained 0·71 per cent. free sugar and 6·53 per cent. glycogen. Dried extract 3·91 per cent. free and 36·82 per cent. combined sugar. The most important part of the disease, therefore, was the exaggerated storage of glycogen, probably due to deficiency of the glycogenolytic factor, an error of metabolism, anenzymatosis or hypoenzymatosis. Besides the name given in the title, the name glycogen-storing disease may be used.

Von Gierke says: "Although we were unable to demonstrate glycogen in this case, owing to the fixative used, we are strongly tempted to suggest that the enlargement is due to glycogen storage." Menetrière and Rubens Duval[2] described a case resembling ours in its histological appearance, but in their case the infant was definitely syphilitic. They also suggested that the enlargement of the cells was due to distension with glycogen.

We are indebted to Dr. A. J. Gardner, of St. George's Hospital, for chemical analysis, and to Dr. J. G. Greenfield, of the National Hospital, for the microphotograph.

[1] Beitr. z. path. Anat., 1929, lxxxii., 497–513.
[2] Archives de Médecine Expérimentale, 1907, xix., 405.

Clinical and Laboratory Notes

THE MODERN OPERATIVE TREATMENT OF DETACHMENT OF THE RETINA

BY R. AFFLECK GREEVES, M.B. LOND., F.R.C.S. ENG.

SENIOR OPHTHALMIC SURGEON, MIDDLESEX HOSPITAL; OPHTHALMIC SURGEON, MOORFIELDS HOSPITAL

LESS than five years ago a diagnosis of retinal detachment was almost synonymous with a sentence of hopeless blindness on an eye so affected; it is true that various methods of treatment, operative and otherwise, had been advocated from time to time and that indeed some genuine successes had been obtained, but in practice these successes were found to constitute a sadly disappointing percentage of the number of cases treated. The method of procedure employed in most of the operations was to perforate the sclerotic with the purpose of draining away the subretinal fluid and so to obtain replacement of the retina. The point chosen for this puncture corresponded as far as possible with the centre of the area over which the retina was thought to be most separated from the underlying choroid. Perforation was usually made with the red-hot galvano-cautery, partly because of its hæmostatic effect but chiefly owing to the greater amount of inflammatory reaction produced by the cautery than by a cutting instrument; it was hoped that the retina after its reposition by evacuation of the underlying fluid would become adherent to the choroidal scar and so be anchored in place.

That rents or holes might occur in detached retinæ was a matter of common experience, and indeed some observers had gone so far as to say that retinal ruptures were present in all myopic detachments. To Jules Gonin, however, belongs the credit of having first pointed out in 1929 the significance of these retinal holes, and so to have laid the foundation upon which all modern work on retinal detachment has been based. Gonin showed that holes in the retina could be found clinically in almost all cases of retinal detachment if sufficient time and care were taken in searching for them, and that if the retinal hole were carefully located and the site of the cautery puncture in the sclerotic chosen so as to correspond accurately with the position of the hole, the percentage of successful results was enormously increased. He found that by placing the cautery puncture in this situation an adhesion between the area of retina surrounding the hole and the choroidal scar was obtained, and that in this way the hole in the retina became closed; also, that the success of the operation depended on the closure of the hole in the retina.

Those ophthalmic surgeons who adopted Gonin's operation soon found it to be a great improvement upon the older ones, as shown by the increased proportion of successes, but it soon became evident that this method was not entirely satisfactory. Not only was the exact localisation of the retinal

hole a difficult matter, but even when this was successfully accomplished the hole was often too large to be covered by the scar of a single cautery puncture, and the operation had to be repeated perhaps more than once. Also, a single adhesion between retina and choroid over so small an area frequently proved to be insufficient, and for this reason a temporary success was sometimes obtained which was subsequently nullified by the tearing away of the retina from the adhesion, with consequent recurrence of the detachment.

Other methods were therefore devised with a view to producing a more extensive adhesion between retina and choroid. One of these is that practised by G. Guist; he advocates the removal of a number of discs from the sclerotic over an area larger than the retinal hole by means of a trephine, 1½ mm. in diameter, care being taken to leave the choroid coat intact. The choroid so exposed is then touched with a pointed stick of caustic potash through each trephine hole in turn, the caustic being at once neutralised by acetic acid. Finally, the subretinal fluid is evacuated by a single perforation of the choroid through one of the trephine holes. This operation gives fairly good results but has proved to be an extremely tedious and lengthy one, and as far as Moorfields is concerned it has been superseded by the method of S. Larsson, who uses the diathermy current to make the necessary series of choroidal scars over a sufficiently wide area. This method is rapid, easy of application, and like Guist's operation does not entail the careful localisation of the retinal hole. A suitable electrode is held in contact with the sclerotic for a period of about five seconds at each point in turn, the strength of the current having been so adjusted as to cause scarring of the choroid without perforating the sclerotic.

An area of sclerotic large enough to more than cover the extent of the retinal hole is thus treated and when this has been done a single perforation of sclerotic and choroid serves to drain away the subretinal fluid and to bring the retina into place.

I do not propose to give a detailed analysis of the cases treated at Moorfields, but a bald statement of my own results will show how encouraging those obtained by Larsson's method have been.

	Cases operated on.	Complete reposition of retina.
Gonin's operation	16	 5
Guist's ,, ...	4	 2
Larsson's ,, ...	10	 8

I have purposely omitted from each section of this list a few cases in which the chances of success were not favourable from the outset, owing to the fact that no retinal hole was discoverable—several of these were cases of retinal detachment following removal of the lens which had been done some years previously. I have, however, included all those in which a retinal hole was present; some of the successful cases had to be operated upon more than once before complete reposition of the retina was obtained, especially among those treated by Gonin's method.

THE RESTORATION OF CENTRAL VISION

With regard to the question of restoration of central vision after operation, the limit of visual acuity obtained probably depends on two factors: first, whether the area of detachment has involved the macula, and secondly, the length of time during which such a detachment has been present. In one case of detachment of five years' duration (the longest period, as far as my cases are concerned, after which success followed operation) an acuity of 6/60 resulted. In most of my cases central vision has tended to show a gradual improvement for some time after the operation, and some patients have ultimately recovered good visual acuity.

It must, of course, be remembered that these operative measures are of very recent date and that several years must elapse before the subject can be regarded with a proper sense of proportion. In my opinion, however, such cases as have been kept under observation warrant the hope that the results obtained will in the main prove permanent.

SUBPHRENIC ABSCESS AND HEPATIC FRICTION

By WALTER BROADBENT, M.D. CAMB., F.R.C.P. LOND.
SENIOR PHYSICIAN TO THE ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON

A MAN of 52 had a sudden acute attack of pain in the right epigastrium, which spread to the right under the lower ribs. He did not vomit. When seen by a doctor two hours later the pain was acute, the temperature 100° F., and friction was audible for about 4 inches above the right lower rib margin in front. A diagnosis of pleurisy was made. The next day the pain was much less, the temperature 102°. The friction had gone, the breath sounds at the right base were diminished. During the week the man became steadily more ill, his tongue dry and brown, and his temperature 99° in the morning and 102° to 103° at night. Dullness had progressed up to above the angle of the right scapula. A needle had been inserted, but no fluid was found.

When I first saw him this dullness was marked, but, on deep inspiration, weak breath sounds and fine crepitations could be heard almost down to the base. In front there was diminished resonance in the right third and fourth spaces, but from the fifth space down to the rib margin resonance was tympanitic. On tapping one coin on another a bell note could be heard from the fifth rib down to an inch above the umbilical level in the right nipple line. This bell note area narrowed up to the ensiform cartilage, but widened towards the axilla. Breath sounds, which were fair in the upper chest, ceased suddenly where the tympanitic area began. The heart was pushed upwards and outwards, the apex being in the fourth space 1½ inches outside the nipple line.

This was evidently a subphrenic gas-containing abscess, and a needle inserted in the anterior axillary line in the eighth space let out foul gas and thin fœtid pus. Later, a portion of rib near the costal margin was removed, and a large abscess opened. A hard irregular ridge could then be felt across the right side of the abdomen about an inch above the umbilical level. Unfortunately the man died and no post-mortem was allowed, but this ridge must have been adherent, omentum and colon forming the lower limit of the abscess. The origin of the trouble was, almost certainly, a perforated duodenal ulcer with a slow leak, not sufficient to cause vomiting. In similar cases the gall-bladder and also the falciform ligament become glued by peritonitis to the duodenum and colon, and the colon to the abdominal wall, a channel being formed with the gall-bladder and falciform ligament on either side and the liver and colon above and below, up which the duodenal

contents spread round the margin of the liver on to the surface of the right lobe, and form a subphrenic gas-containing abscess.

The friction, which led to the erroneous diagnosis of pleurisy, was really hepatic friction caused by the diaphragm rubbing on the inflamed upper surface of the liver. Hepatic friction may also be heard in the early stage of a perforated gastric ulcer near the pylorus and in some cases of cholecystitis.

INFLUENZA, ACIDOSIS, OR APPENDICITIS?

By William Goldie, M.B. Aberd.
HOUSE PHYSICIAN, ABERDEEN ROYAL INFIRMARY

In The Lancet of Jan. 21st (p. 141) Dr. H. L. Marriott reports on 47 cases of influenza. Seven of these cases belong to the alimentary type of the disease, which Marriott thinks might well be mistaken for an acute surgical abdominal condition. The definite tenderness in the right iliac fossa naturally suggests the possibility of acute appendicitis. In the January number of the *Practitioner* Dr. A. H. Douthwaite also draws attention to this difficulty in diagnosis, and says: "Probably in no year have the symptoms been so striking as in 1932, when in the early spring numerous abdomens were opened in the faulty diagnosis of appendicitis." He also states that in the absence of a leucocyte count the appendicular form of influenza may ape acute appendicitis so closely as to render accurate diagnosis impossible.

In the following case the differential diagnosis was rendered still more difficult by a complication which can itself simulate acute appendicitis extremely closely.

The patient, a woman aged 24, was admitted to the Aberdeen Royal Infirmary under the charge of Prof. Stanley Davidson on Jan. 11th in diabetic coma. For the three days prior to admission the patient had suffered from malaise, headache, nausea, and vomiting, followed by severe pain in the lower abdomen and the onset of coma. The family doctor suggested that the factor precipitating the coma was acute appendicitis.

State on examination.—The patient was in coma. Pulse-rate, 96. Temperature, 100° F. Urine and breath loaded with acetone. Blood-sugar, 475 mg. per 100 c.cm. Unconsciousness was not complete, since it was still possible to arouse the patient to some slight degree. All the classical signs of diabetic coma were present. Despite her comatose condition, when the appendicular area was palpated the patient immediately groaned and her reflex defence mechanism produced a boarding of the right rectus muscle and a flexion of the thigh on the hip. In addition the cæcum felt distinctly boggy. The white cell count showed that 28,400 leucocytes per c.mm. of blood were present, most of which were neutrophil polymorphs.

There seemed to be three possible causes of the abdominal manifestations:—

(1) *Gastro-intestinal influenza.*—In favour of this view there was (*a*) the fact that an influenzal epidemic was raging in Aberdeen and that a case of influenza was present in the home of the patient; (*b*) the onset and character of the symptoms were suggestive of influenza. Against the diagnosis of influenza was the finding of a marked leucocytosis. It was possible, however, that the leucopenic blood picture of influenza had been masked by the opposing effect of acidosis, which is known to produce an increased leucocyte count in many cases.

(2) *Acute appendicitis.*—In favour of this diagnosis was the marked and extremely localised tenderness and rigidity over the appendicular area, and the high leucocyte count. Against this diagnosis was the absence of symptoms suggestive of previous attacks of appendicitis, and the fact that the abnormal signs cleared up with the acidosis in a few days. The history of the premonitory symptoms was more characteristic of influenza than of acute appendicitis.

(3) *Acidosis and diabetic coma.*—It is recognised that in severe acidosis abdominal symptoms may be severe and so similar to those of acute appendicitis that laparotomy has not infrequently been performed. Against this diagnosis was the degree of the leucocytosis, the extreme tenderness and definite localisation of the area of rigidity present, and the raised temperature. In conclusion it seemed more probable that a genuine inflammatory condition of the cæcum and appendix was present, but it is impossible to say whether this was appendicitis or a blood-borne inflammation of the bowel as is believed to occur in abdominal influenza.

Surgical measures were not adopted in this case. The usual treatment of diabetic coma was undertaken and the abdominal signs cleared up in a few days.

NEW INVENTIONS

THE PHLEBOTOMIST'S CARRIER

I have devised the handy case illustrated for carrying French's phlebotomy apparatus. The case is stoutly built of fabric and three-ply wood, covered with brown rexine; and the lid when open lies flat, so as to form a tray. The bottle is retained upright

by means of a web strap affixed to the back. There are three drawers to carry all accessories. The measurements of the case over all are: 16″ by 9″ by 4″; and of the drawers the top measures 8¾″ by 3″ by 1¼″, and the middle and lowest 10¼″ by 3¼″ by 3¼″. The carrier is provided with spring locks and key.

Messrs. Allen and Hanburys, Ltd., Bethnal Green, London, E., are the makers.

S. Watson Smith, M.D., Ch.B. Edin.

Glasgow Royal Infirmary: Annual Report.—The recently completed year's working shows that the ordinary income has fallen short of the expenditure by £30,000; in the previous year the deficiency was about £24,000. By using free legacies, however, the accounts have been squared and a small balance carried over to the current year. It is claimed that the reconditioning of the X ray department, now in progress, will make it "in advance of any similar institution in Scotland." Of the 76 probationer nurses who entered for the preliminary State examination all passed but one; in the final there were only three failures out of 66. It is proposed that the bursary of £170 provided by Mrs. Chrystal, of Auchendennan, should this year be given as a travelling scholarship to allow of a trained nurse visiting hospitals in this country, on the continent, or in America. In his speech at the recent annual meeting the Lord Provost urged young women, whatever their position in life, to take a nurse's course "with the object of acquiring a useful training for the ordinary duties of life."

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF TROPICAL DISEASES AND PARASITOLOGY

AT a meeting of this section, held on Feb. 2nd, the chair was taken by Dr. H. S. STANNUS, the president, and a paper on an examination of

Tropical Neurasthenia

was read by Prof. MILLAIS CULPIN. He said that the knowledge of neurasthenia was slight, but the conception of it had recently changed. Its distribution even in this country was capricious and often difficult to explain, and its incidence in the tropics was possibly no greater than in some other places. The word had appeared in the eighteenth century, and had been introduced to describe a condition of nerve-wasting, a conception which had harmonised with the materialistic attitude of the time. In what had been termed the "rubbish-heap" of neurasthenia were included anxiety states and obsessional states. When individual cases of "neurasthenia" were clearly described, in accordance with modern psychopathology, the clinical scope of the diagnosis narrowed almost to vanishing point. Anxiety and obsessional states were based on psychological factors and students should be taught to diagnose them. When they were excluded there remained only a temporary state described by Farquhar Buzzard as "autonomous depression," a condition of fatigue, like that after influenza, which did not respond to psychotherapy but recovered spontaneously. It was rare—not more than 5 per cent. of all cases seeking psychological help. The trouble was a reaction of the man as a whole rather than a physical or biochemical change in nervous tissue. Two opposite ætiologies had been set forth by past writers: hard work and stress by some, and dissipation and sin by others.

The phrase "tropical neurasthenia" suggested a direct physical influence of climate, but the dweller in tropical countries was subjected to very numerous depressing and irritating stimuli. He was never at rest, and always on guard, often anxious about personal safety, health, and finance. Innumerable physical causes had been suggested, but it was impossible for anyone who approached the problem from the psychological aspect to argue with those who insisted on a physical basis. Obviously tropical diseases might have an influence on nervous disorders; any debilitating condition might allow a latent psychoneurosis to become manifest, and bowel troubles might be psychologically determined, as in mucous colitis. Any associated physical condition should be treated, apart from the neurasthenia. It was difficult to estimate the incidence of tropical neurasthenia because the condition was disguised under physical diagnoses such as bowel disorders, "D.A.H.," and malaria. Neurotic patients might unwittingly mimic tropical diseases, and people who had had malaria often described as "malarial rigors" subsequent anxiety attacks. A rise of temperature might even occur in hysterical "rigors."

Prof. Culpin recounted his own experiences in Queensland and Shanghai. In a tropical district of the Australian bush there had been scarcely any illness and no nervous troubles. The people had all done heavy manual work and paid little respect to the hot sun. There was a great psychological difference between taking exercise for the sake of exercise and doing hard work for an end in view. Rigidity of occupational conditions everywhere favoured nervous disorder. For this reason the wife was more liable than the husband; she had to work hard in the same hot ill-ventilated kitchen day after day, while he could change his place of work and was in the open air. The great difference between the Queensland area and Shanghai was that the inhabitants of the former regarded it as their permanent home. In Shanghai there had been a good deal of nervous breakdown, but its incidence had been very small among the lower classes who had settled there. The disorder was very rare indeed on the Anglo-Persian oilfields, and this was explained by the careful intuitive psychological selection of candidates. Another factor in preventing nervous breakdown was satisfaction and a sense of security among employees, and another was a medical staff awake to the psychoneurotic temperament, its early symptoms, and the treatment. Medical students ought to be able to answer the question: "What do you think of that man's psychoneurotic state?" as readily as the question: "What do you make of that man's heart?" The stimulus that produced breakdown might be one or several of very many things, and if it were strong enough almost any man might break. Hard work never caused more than a physiological breakdown from which recovery was swift and sure. There was, however, a pathological urge to overwork, based on obsession, which preceded suicide. People had nervous troubles in the tropics just as elsewhere, and there was no justification for assuming any form of neurasthenia peculiar to the tropics. When the trouble arose it should be treated in the same way as a minor psychosis anywhere else.

INVALIDING FOR NERVOUS CAUSES

Dr. H. C. SQUIRES interpreted "tropical neurasthenia" as all those disabilities of Europeans in the tropics, other than the psychoses, which came within the scope of psychological medicine. They caused an immense amount of invaliding, and yet the medical officer received little or no training in their diagnosis and treatment. The most striking feature of such statistics as were available was the high percentage of invaliding for psychological reasons after less than four years' service. The chief ætiological factor was the action of stresses on people of a certain constitution, rather than the effect of abnormal stresses on ordinary people. The emotional factors were more important than the physical agencies such as light, heat, and dust. Those who found acclimatisation difficult usually manifested indications of the neurotic constitution. Sex influenced a man according to his life style. With a man for whom virility was the essential symbol of manhood, tropical conditions might raise unbearable conflict, which might be mitigated by liaisons with native women or by neurosis. Sexual intercourse might be the symbol of masculinity, and the assertion of his power and authority to a man living in a primitive and warlike community.

Dr. MURDO MACKENZIE described some cases in which tropical life had precipitated a neurotic state somewhere between the major and minor psychosis. In each of them there was a difficult psychological situation which had not essentially anything to do with the tropics. The only really typical case of neurasthenia he had seen had subsequently manifested

tabetic signs! Neurasthenic symptoms might also appear in retarded cases of schizophrenia.

Dr. P. H. MANSON-BAHR said that the London School of Tropical Medicine would soon become a school for the study of neurosis in the tropics. Tropical diseases were playing a very small part in invaliding now: 1 per cent. as opposed to 30 per cent. of psychological disorders. The psychotherapist ought to play a very important part in the examination of candidates. A rugger blue, apparently an ideal empire-builder, might come back in three or four years psychoneurotic. Moreover, the problem arose whether such a case should ever go back. The monotony of tropical life was an ætiological factor worthy of consideration. Patients started with insomnia, and then began to imagine things.

Sir MALCOLM WATSON spoke of 28 years in the Malay Peninsula with a day temperature of 90°, a night humidity of 95–100°, cicadas, bull-frogs, and termites, as well as the social habit of taking alcohol. Malaria had at first been so bad that white women could not live there; 90 per cent. of the men had lived with native women, but this had not affected them in any way. Later, the country had been almost freed from tropical disease, but cases of unfitness for the duties of life had become a problem. There was a certain cure: to send the victim to a hill station regularly for two or three weeks every year. There had been a great increase of neurasthenia during the war when leave was scanty. Eight hours sleep and sweating from active exercise were essential. He agreed that hard work did no harm. Since the war alcoholism and living with native women had much decreased but neurasthenia had increased.

Dr. R. A. O'BRIEN said that neurasthenia was no more a tropical disease than pneumonia, but it caused a grave amount of permanent invaliding. In 1930 the West African service had lost 49 people, 11 for neurasthenia or psychasthenia. In 1931 there had been 13 neurasthenics and 4 alcoholics out of 48 invalided. In the Dutch West Indies the figure for "neuroses" had been between 40 and 59 per cent. of those sent home invalided. A European degenerated physically in the tropics, and probably also mentally. He met more obnoxious stimuli in the tropics than at home and so was far more liable to neurasthenia.

Dr. R. TRAVERS SMITH thought that the astonishing thing was that so few people broke down. Everybody going to the tropics was potentially nervous, and in the tropics they met stimuli likely to break them down. The greatest sufferers were brides, who failed to adapt themselves to married life, cut off from home and friends. Children born in the tropics were over-terrified by their parents of the sexual aggression of the natives. Separation from the mother—the mother-country—had a profound psychological effect. The sun also had profound psychological significance. The heat stimulated sexuality, causing severe conflict. Social conditions promoted alcoholism, which reduced ego-control. Tropical neurasthenia, however, differed in no way from home neurasthenia. Psychoneurosis developed at home might be cured by residence in the tropics.

Dr. DAVID FORSYTH welcomed the spread of psychology into all branches of medicine. He supported Prof. Culpin's views, especially as to the rarity of "true" neurasthenia. Men invalided home were obviously of neurotic constitution, and one motive in selecting foreign service was to escape from the difficulties of life at home. Some had failed to get on at home because of a negative, quarrelsome attitude; others suffered from inferiority and thought life would be easier among an inferior race; while others had suffered from morbid shyness, particularly in the presence of women, and had escaped from this by going abroad. Psychological investigation of candidates would detect these types.

Dr. W. E. COOKE supported Dr. Manson-Bahr's plea for help in assessing the fitness of candidates. Bowel diseases had an enormous effect on the mind; some people "lived in their bowels." The prevalence of helminth diseases and their effect on the mind required a good deal of study before all these conditions were classed as mental.

The PRESIDENT emphasised the necessity of knowing some psychology, and the importance of agreeing with the companies concerned what kind of examination should be made. One of the most calamitous cases he had ever seen had been a rugger blue. None of the "old stagers" had had neurasthenia, though they had often drunk freely. People who had any interest in their bowels were a priori neurasthenic.

Prof. MILLAIS CULPIN replied. He said he did not believe that white men degenerated in the tropics.

SECTION OF LARYNGOLOGY

A MEETING of this section was held on Feb. 3rd, Mr. MUSGRAVE WOODMAN (Birmingham) presiding.

Mr. G. GORDON-TAYLOR introduced a discussion on

Malignant Disease of the Oropharynx

He said that the extirpation of primary malignant growths of the oropharynx and fauces practically never now involved the use of the old-fashioned knife, the modes of surgical attack being almost limited to diathermy or one of the various forms of radiation. In this respect the surgery of those parts corresponded with the surgery of the buccal cavity; the knife was only required for the subsequent fashioning of flaps to fill the gap produced by the operation. Though diathermy was at one time disparaged surgeons seemed to be now agreed that diathermy was one of the methods of election for carcinoma of the oropharynx. The endothermy knife was now often used for this purpose. Most surgeons preferred the ordinary knife for removing infected tissues and lymphatic glands in the neck, and he was not convinced that the late results of block dissections were improved by using the endothermy knife, or by the subsequent use of Columbia paste. Where the primary growth was infiltrating, or the lymphatic glands of the neck were involved, the patient was subjected to preliminary dissection of the neck, and the external carotid artery was tied. Mr. Gordon-Taylor had only twice seen severe secondary hæmorrhage following diathermy excision of carcinoma of the tongue; it was easily controlled. He had had one fatal case from severe hæmorrhage following diathermy for malignant disease of the tonsil; in that case the external carotid had not been tied. In the more advanced type of case it might be necessary to gain access to the tumour either by splitting the cheek, or by removing the alveolar or the upper border of the jaw.

When access was insufficient without splitting the cheek, the removal of half the mandible back to the condyle of the jaw gave good access to the base of the tongue in the neighbourhood of the tonsil. In carcinoma of the hypopharynx he tried to preserve the sternomastoid muscle, and in oropharynx cases he was sometimes able to preserve it. Occasionally,

by turning the posterior belly of the digastric muscle over the facial artery, putting in a rubber dam and stitching it in place over the tonsils he provided a good landmark for the second operation and lessened the chance of infection. He admired Mr. Wilfred Trotter's operations on the pharynx, but had never managed to secure adequate access to the area around the base of the tongue either with superior lateral pharyngotomy or through transmedian lingual pharyngotomy. He preferred to gain access by removing half the jaw and the canine fossa condyle.

For malignant growths of fauces Mr. Gordon-Taylor carried out diathermy excision, or coagulation, or a combination of these. For larger growths he did the double operation: block dissection of neck, followed by diathermy of the primary growth. For still more extensive growths he did dissection with ligature of the external carotid, obtaining access to the primary growth by removing a portion of the cheek or resection of half the mandible. In the presence of doubtful growths at the base of the tongue it was important to do a biopsy. In the decision whether to deal with a particular growth by ordinary surgery or by radium the sex, the social environment, and the physical conformation of the patient must be considered. A large body of statistics showed that three out of every four tumours had been relatively sterilised by radiation treatment. In carcinoma of the tongue Mr. Gordon-Taylor held that diathermy excision was the best of all treatments.

Mr. NORMAN PATTERSON said that carcinoma in this locality was comparatively rare; of 500 cases of cancer dealt with by Sir James Paget, 2 were in the tonsil, 9 in the gums and palate, and 30 in the tongue. Only in the early stages of a case could the exact site of origin be determined; a growth originating in the tonsil might later show the main mass in the tongue. In every case a thorough examination should be made of nasopharynx, hypopharynx, and larynx both by mirror and palpation. A growth too small to be visible might be detected by palpation. Sometimes tonsillectomy was valuable as a diagnostic measure. It was a serious error to mistake cancer for syphilis; on the other hand, he had rarely seen syphilis diagnosed as cancer. The average age of patients in his series of fifty cases was 58 (the oldest 80, the youngest 38). Forty-eight were males and two females, and neither of the latter had carcinoma of tonsil or pharyngeal portion of the tongue. Preliminary removal of tissue for microscopical examination was, he thought, rarely needed; but if it should be, the endothermy knife should be used for the purpose. The outlook in these cases had much improved since the introduction of excision of the primary growth by diathermy combined with a bold attack on the cervical lymphatic glands. But his results after the use of radium had been disappointing. In some cases a combination of diathermy, surgery, and radiation was best. Sometimes, owing to the size of the growth, it was necessary to do a bilateral operation on the neck. After removing the tumour, the cavity should be treated with the button electrode.

Treatment of the gland-bearing areas presented a bigger problem than treatment of the tumour itself. Enlarged glands were sometimes found, on removal, to be non-malignant, but a negative report on tissue removed from the neck was not always conclusive, and glandular metastasis might appear years after the primary tumour was removed. For a growth of the oropharynx he always took away the sternomastoid muscle. Unless there was reasonable hope of lasting good from extirpation, it was not desirable to carry out block resection. He ligatured the external carotid at the time of the operation, and when the growth was large it might be well to also ligature the fellow carotid.

Prof. L. VAN DEN WILDENBERG (Antwerp) spoke of the treatment of tumours of the tonsil and at the base of the tongue. The varieties he had met with in this region were lymphosarcoma and epithelioma. He treated the first of these with X rays, the routine dose being 180 kv. at a distance of 40 cm., with a filtration of 1 mm. of copper, using large fields. The tumour disappeared rapidly and it was rare to see local recurrence. On the other hand, distant metastasis was common, and the duration of life depended on the number of secondary deposits and their situation. A good but more expensive method of treatment was by means of moulded wax with contained radium. In these circumstances the dose was 1 millicurie per sq. cm. at a distance of 3–4 cm., with a filtration of 1 mm. of platinum. Both sides were treated, and a dosage of 100 to 150 mg. was spread over about a week. Some of his patients had survived eight years. He considered it advisable to treat neighbouring gland-bearing areas, even if the glands showed no sign of involvement. For epithelioma he used either the routine X ray treatment or the surface application of radium if the growth was such that only palliative results were to be hoped for. He did not advise the use of radium needles here, since it was difficult to keep them in position. He inclined most to telecurietherapy. Usually the growth disappeared locally, but there might be local recurrence. At present he was combining medical with surgical treatment.

DISCUSSION

Mr. WILFRED TROTTER agreed with Mr. Gordon-Taylor's dictum that in early cases, where the growth was superficial, it was unnecessary to insist on immediate gland resection. When a point had been reached in the treatment of a particularly deadly kind of cancer at which experience showed the patient could be spared some of the suffering involved in dealing with it, that opportunity should be grasped. He disagreed with Mr. Gordon-Taylor's remarks about the median pharyngotomy; he had used it with advantage in cases of comparatively early tumours close to the middle line, for he found it was the only operation for the radical cure of growths fairly far down the pharynx, and it did not cause bleeding.

Mr. DOUGLAS HARMER said he had been carefully following radiological methods for 20 years, but various ways of treating cancer should not be pitted one against another, since all had their special uses in appropriate cases. Taking that view, the question was one of selection. Here biopsy was very important, but it should not be done if a clinical diagnosis could be made with certainty, for fear lest it might spread cancer cells. Such dissemination could be effected even by massage, or by considerable handling. With rapidly growing sarcomata, epitheliomata, and transition-cell carcinomata there were grave risks from surgical, and even diathermy treatment, but they responded miraculously to irradiation. With early growths surgery gave good results, and he advised surgeons to stick to their surgery unless they had worked for a long time at radiology. Growths of the oropharynx were too deeply situated for complete disappearance of the growth to be expected from purely superficial irradiation. Present radiation

bombs were not large enough to get results at such a distance without serious damage to the skin. The best way was to give some surface X radiation, and supplement it by interstitial application.

Mr. W. S. DICKIE (Middlesbrough) said he regarded the tonsil as, to a large extent, immune from cancer; cases so-called of tonsillar carcinoma originated, he contended, in the anterior pillar of the fauces. These cases were becoming commoner, those of the lip less so. Cancer of the anterior pillar of the fauces did not readily infect the lymphatic glands; it was, he considered, a local disease. He dealt with it by block dissection of part of the neck, division in the midline, resection of the jaw to the canine fossa, and excision of the growth.

Mr. W. L. WATT suggested that in so-called borderline cases (late operable, early non-operable) a full course of deep X ray therapy should be given. He thought it possible that a combination of three methods might give improved results in severe cases.

Dr. DAN MCKENZIE gave the results obtained in 11 cases of removal of cancer in this region by diathermy excision. Six recurred: 2 soon after operation, 2 in a year, 1 in 3 years, 1 in 5 years. Two were now alive after 4 years, 1 after 6 years, 1 died of morbus cordis after 12 years. Removal of the sternomastoid facilitated dissection and removal of glands, and he always tied the external carotid.

Dr. T. B. JOBSON spoke of some cases of carcinoma in this region which he had treated. Most of them were squamous-celled. All but one were operated upon by diathermy, and some had X ray treatment secondarily. The results as a rule were discouraging; many cases were far advanced before the surgeon saw them.

Mr. GORDON-TAYLOR, in reply, agreed about the risks of dissemination through biopsy; if biopsy was necessary it should be done with the endothermy knife.—Mr. NORMAN PATTERSON took the same view.

SECTION OF OTOLOGY

AT the meeting of this section on Feb. 3rd, with Mr. J. F. O'MALLEY, the president, in the chair, the discussion on

Should Acute Mastoiditis be Operated upon Early or Late?

was opened by Dr. DOUGLAS GUTHRIE (Edinburgh). The decision, he said, was not always easy. The question really was how early could one operate, rather than how long could one wait. "Early" he took to mean operation during the first week of the otitis, and "late," operation after the fourth week. "Early" did not mean immediate. In the last decade there had been a growing tendency to operate early, and it had been suggested that in acute suppurative otitis the mastoid process should be opened for drainage, even when the usual signs of mastoiditis were absent. The time had now arrived to determine whether the pendulum had swung too far in favour of early operation. It might be that the risks in operating too early were equal to those of operating too late. The indications for operation were not always definite; cases of acute suppurative otitis were met with in which there was only slight mastoid tenderness, and yet the antrum and numerous air-cells were filled with pus. Hence the clinical symptoms bore no dependable relation to the pathology of the mastoiditis, and so the decision on the case became a matter of personal opinion. Signs of meningeal or labyrinthine implication constituted a definite call to operate, and so did a profuse discharge of pus which reappeared after some had been mopped away. Temperature and pulse-rate were not a constant guide, indeed in many cases the temperature remained normal. A high leucocyte count denoted a severe infection, but few otologists would decide to operate from the blood picture, and very few as a result of X ray examination. The chief sign was the presence of mastoid pain and tenderness or œdema. The two former were significant according to the period which had elapsed since the onset of the otitis. Alexander spoke of a prior and less severe condition which he called "mastoidism," and said operation was not necessary until mastoiditis could be diagnosed.

How long should the otologist wait after the establishment of a free meatal discharge? The longer a case went on, the greater became the importance of the symptoms. Some argued that, as in the case of appendicitis, mastoiditis should be operated upon at sight, but Dr. Guthrie claimed that the two situations were not analogous, and in some cases of mastoiditis a spread of the infection might be favoured by dealing too soon with the local focus. Neumann, as a result of an analysis and study of 1300 cases, stated that the second and third weeks after the onset of symptoms were the best time for operation, and in the cases operated upon in the first week there was a mortality of 8 per cent., and a complication rate of 25 per cent. There were no deaths or complications in the cases operated upon in the second and third weeks.

Cases could be divided, he said, into three classes—the average, the mild, and the severe case. In the first class, early operation could be said to be sound in practice, and the results were good; the safest period for these seemed to be during the second or third week. In the second class there was always the possibility of recovery without operation; early mastoid symptoms did not necessarily demand immediate operation. In the acutely fulminating case operation in the first week was not so safe as some considered; dealing with it at this stage might result in a general septicæmia, and longer delay seemed to be justified by experience.

Mr. C. A. SCOTT RIDOUT (Portsmouth) held that there was a closer analogy than Dr. Guthrie conceded between mastoiditis and acute appendicitis; it could be placed in the same category of urgency as any other form of osteomyelitis. For 15 years his practice when recognising acute mastoiditis had been to at once open and drain. The text-book signs were well known, and in addition he paid particular attention to the toxic appearance of the patient, with an increasing pulse-rate, mastoid tenderness, a swollen and bulging tympanum, either with or without discharge, and sagging of the posterior meatal wall. Sometimes cases presented themselves in which the problem was to determine whether the condition was acute mastoiditis or acute furunculosis with œdema. In 24 years he had operated upon 196 cases, and four patients died, one of these not having been seen until the eleventh day. It was his firm view that lateral sinus thrombosis and meningitis were more likely to ensue if operation was delayed. By early operation and sewing up the greater part of the wound he expected complete healing with preservation of hearing. In only one case had he regretted operating early.

DISCUSSION

Dr. DAN MCKENZIE said his leanings were towards early operation in these cases, but one must be governed by what seemed best for the particular patient. It was suggested by some that in the

fulminating case it was advisable to wait a few days before operating, so as to allow of the fixation of the abscess, and thus lessen the risk of general septic dissemination. Referring to the statistics of Neumann, which Dr. Guthrie quoted, he said that whenever one set out to seek justification for any particular policy one was able to find some comfortably supporting statistics. His criticism of these figures of Neumann's was that it was not stated whether the operations were done because a definite complication was present, or done simply in carrying out the principle of early operation. Without this essential information the figures were useless as a guide. There was danger in this region that pus might go inwards to the brain as well as outward. Of his last 100 cases 6 died of meningitis. He advocated early operation and drainage in the fulminating cases.

Dr. H. M. HENDERSHOTT (Oregon, U.S.A.) thought that the blood picture gave a valuable indication as to the time to operate—i.e., as to whether or not the blood was putting up a good fight against the disease. If not, operation was called for.

Mr. ERIC WATSON-WILLIAMS said that in cases where the decision had been reached that an operation would be required—for some cases got well without operation—he believed in doing it at once. Even by waiting a week one was unnecessarily exposing a patient to risks. Many fulminating cases of septicæmia were fatal, whatever was done for them. The preservation of the hearing was very important to aim at.

Mr. T. B. LAYTON agreed that treatment of osteomyelitis afforded the best basic treatment for these cases of mastoiditis. In invasive mastoiditis there was a danger of septicæmia and great risk of spread to the brain. He attributed the greatest importance in diagnosis to the general appearance of the patient. For years Mr. W. M. Mollison had been teaching that deafness was a sign of mastoiditis; and for a long time he did not agree, until a tragic case convinced him that Mr. Mollison was right.

Mr. E. COWPER TAMPLIN wished more stress were laid on the need for carefully watching the patients. This advice from experts would be valuable to general practitioners, who usually saw cases first.

Sir JAMES DUNDAS-GRANT laid emphasis on the importance of tenderness as a sign to be assessed with other signs and symptoms, especially a sense of throbbing in the area. Cases differed greatly in the guise in which they were presented, and peculiarities of anatomical conformation must not be left out of account.

Mr. W. STUART-LOW professed himself, after 50 years of practice in this field, strongly in favour of early operation for mastoiditis. He agreed as to the importance of a throbbing, and if in such a case pus returned after its aspiration he did not hesitate about operating.

Dr. R. SCOTT STEVENSON said it was a mistake to think every case of mastoiditis must be operated upon, and the statistics of the Mayo Clinic showed that the results had been better since operation had been delayed for a time. Only 28 cases out of 1302 were operated upon in the first week. In 16 of the 28 cases there were early complications.

Mr. W. S. ADAMS (Birmingham) said his experience with fulminating cases had been disastrous, since of six such cases four died. Of 100 cases of mastoiditis in his experience of 18 months he did no more than paracentesis in 41, and in the remaining 59 he operated on the mastoid. One of them was lost through fulminating otitis, followed on the second day by lateral sinus thrombosis, death taking place on the fourth day.

Mr. L. GRAHAM BROWN said he considered there was a period in these cases when one could hope for natural drainage from the mastoid antrum and cells. Even in so-called influenzal epidemics he had seen these cases clear up if operation was delayed. When empyema occurred it was an indication of the need of something further. But how was one to recognise empyema in the mastoid bone? Only by the clinical, and especially the physical, signs. Many cases were seen in which it seemed appropriate to operate, but the disease was limited to the muco-periosteum, and they cleared up without calling for operation.

Mr. J. A. GIBB said there was no need to hurry about operation in the first 24 to 48 hours, but to wait for a week or more was to ask for trouble. Mastoid disease in the child was a different condition from that in the adult.

Mr. SOMERVILLE HASTINGS thought it had not been sufficiently emphasised that mastoid disease was not, per se, lethal. He had seen cases having definite pain and tenderness on pressure recover. The chief question was whether there were liable to be complications; if so, operation must be carried out.

Dr. GUTHRIE, in reply, said he took the view opposite to that decided upon by Mr. Ridout in order to induce a thorough discussion; yet he largely shared Mr. Ridout's view, though he still held that cases did occur in which it was as well to delay operation for a time, while carefully watching the patient.

Mr. RIDOUT said he was still an unrepentant advocate of operation within a few hours of mastoiditis being diagnosed. Admittedly if the case was not too acute, a night spent in hospital might be to the good; but delay he did not believe in.

ASSOCIATION OF CLINICAL PATHOLOGISTS

THE sixth annual meeting was held on Jan. 28th in the pathological department of St. Bartholomew's Hospital. Prof. E. H. KETTLE opened the meeting, and in the absence of the president, Dr. G. W. GOODHART, the chair was afterwards taken by Dr. J. G. GREENFIELD, vice-president of the association.

Dr. D. EMBLETON (London) contributed some observations on obesity in men and women. In endeavouring to reduce overweight of individuals Dr. Embleton had found a great difference in the behaviour of the two sexes. A fairly high proportion of overweight males showed sugar in the urine, and on examination of the glucose-tolerance curve gave a rise of the blood-sugar above what is usually regarded as the normal level; in certain cases the curve assumed the plateau form usually regarded as of prediabetic form. The male patients responded well to treatment with a balanced diet fairly rich in carbohydrate and slightly below their metabolic requirements. Sugar and pastry were omitted from the diet, and the carbohydrate taken in the form of fruits, vegetables, and bread. The caloric value might be from 1500 to 2000, according to the work and weight of the patient. Dr. Embleton laid great stress on the importance of absolute prohibition of alcohol in any form. Women, however, seldom gave any abnormality of the glucose-tolerance curve, and in them glycosuria in the absence of frank diabetes was a rarity. It was difficult to bring down

the weight of female patients, and their weight tended to become stationary before the standard weight for the height and age had been reached in spite of drastic reduction of the diet. In certain cases the metabolic rate was below normal, and in these thyroid was of assistance.

Dr. CUTHBERT DUKES (London) recorded observations on the glucose tolerance in cases of rheumatism and pruritus. In a small proportion of cases of rheumatism he had found abnormalities of carbohydrate metabolism; in one case rheumatic symptoms had developed after prolonged over-indulgence in sweetmeats and had persisted, and here the glucose-tolerance curve approached the plateau type of diabetes. Some benefit had been brought about by regulation of the diet. He did not think it necessary to plot the glucose-tolerance curve in every case of rheumatism; a test dose of glucose followed by examination of the urine would reveal whether further investigation was necessary. In cases of pruritus other than those of diabetic origin, Dr. Dukes found no disturbance of the glucose metabolism.

Dr. A. RENSHAW (Manchester), Mr. F. TWYMAN, and Mr. D. H. FOLLETT (London) demonstrated an apparatus, tentatively named the hemovisor, for the quantitative examination of the blood and of suspensions of precipitates by optical methods. On the same specimen the mean diameter of the red cells was shown by the halometric method of A. Pijper; the enumeration of these cells was brought about by the passage through the suspension of a beam of light which afterwards fell upon a light sensitive cell, the number of red cells per c.cm. being indicated upon a calibrated scale by the beam from a galvanometer. The instrument was also adapted to give a numerical expression to the density of precipitates such as those formed in the Kahn test and of other suspensions such as bacterial emulsions. The apparatus is being constructed by Messrs. Adam Hilger and Co.

Dr. J. G. GREENFIELD and Dr. ELIZABETH O'FLYNN (London), investigating pituitary tumours, had been unable to demonstrate any constant abnormality in the glucose-tolerance curve for any particular type of tumour. They suggested that glycosuria in such cases might be brought about in some instances by the antagonistic action of pituitrin on insulin, and in others by a disturbance of renal function inducing failure of reabsorption of the sugar in the glomerular filtrate.

The same workers recorded observations on the leucocyte count after irradiation of the thymus. Contrary to expectations irradiation resulted in no drop in the relative or total lymphocytic count. Dr. Greenfield also showed highly decalcified bones from two cases of toxic adenoma of the thyroid.

Dr. ERIC WORDLEY (Plymouth) demonstrated the most recent method of Kay for the estimation of the blood phosphatase and referred briefly to its importance in clinical medicine. He emphasised the fact that the blood phosphatase is greatly raised in osteitis fibrosa of the generalised type, only moderately so in osteitis deformans, and not at all in osteitis of the focal type.

Dr. D. S. MURRAY (London), in the absence of Dr. Goodhart, demonstrated an adenoma of the pancreas which had given rise to hypoglycæmia. The patient, a female of middle age, was admitted to the Archway Hospital, Highgate, suffering from recurrent attacks of coma. During these attacks the blood-sugar was found to be very low, on one occasion reaching 0·02 per cent. An adenoma of the pancreas was diagnosed but the patient refused to submit to operation and discharged herself. She was later admitted suffering from broncho-pneumonia, from which she died; an adenoma of islet tissue was found in the pancreas at post-mortem. The tumour was embedded deeply in the pancreas, and surgical removal would have entailed great difficulty.—Dr. W. W. MACKARELL (Leicester) described a similar case in which the pedunculated tumour would not have been difficult to remove.

Dr. S. C. DYKE (Wolverhampton) demonstrated a tumour of the parathyroid which had given rise to general osteitis fibrosa. The patient, a girl aged 13, was admitted to the Royal Hospital, Wolverhampton, in 1930, suffering from pain and shortening of the left leg. Radiograms showed rarefaction of the bones of the left hip; the blood calcium was found to be over 17 mg. per cent., and the urinary excretion of calcium increased. A tentative diagnosis of parathyroid tumour was made but operation was not performed until two years later. Calcium balance investigations showed a calcium retention; an adenoma of the parathyroid was removed at operation, whereupon the blood calcium dropped, the calcium balance became positive, and symptoms disappeared.

Dr. Dyke also demonstrated, for Mr. R. L. DUTTON (Wolverhampton), an apparatus for the clinical estimation of the cholesterol content of the blood. The method required only 0·25 c.cm. of blood; this was taken up on absorbent paper and extracted with chloroform in a special apparatus; the estimation was made colorimetrically, using the acetic-anhydride-sulphuric acid colour reaction.

Dr. R. KLABER (London) showed an extensive series of microscopical preparations of fungal infections of the skin, with cultures of the different species. He pointed out that the so-called "common ringworm," the microsporon audouini, is not nearly so common as it once was; the "black-dot" ringworm, once rare, is occurring more frequently. Dr. Klaber said that this type of ringworm was difficult to diagnose; infected hairs were best secured by lifting them out with the overlying scurfy skin.

Mr. H. E. KENDRICK (London) demonstrated apparatus for hospital use, and also of portable type, for the estimation of the basal metabolic rate, and also various types of apparatus for the chemical examination of the blood.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION

A MEETING of this association was held on Jan. 25th, with Prof. M. LUCAS KEENE in the chair. Dame LOUISE MCILROY spoke on

Things that Matter in Midwifery

As to diagnosis in the early stages, she said, Aschheim-Zondek tests, and after the twentieth week X rays, were useful. At the twentieth week the X rays just showed a row of dots which indicated the line of the fœtal vertebral column and a radiogram near term would show whether the head was in the centre, when it would usually give little trouble, over the pelvic cavity, or to one side. X rays might also give valuable information where death of the fœtus was suspected, showing sometimes only a mottled mass in the pelvis which made it quite clear that the

fœtus had died some time previously. In these cases, Prof. McIlroy said, it was her practice to leave the patient alone until abortion occurred spontaneously, or until some indication for interference arose.

When examining a pregnant woman it was customary to begin at the fundus, holding the hands in a cup-shaped position; if there was tenderness at the fundus, breech presentation should be suspected, the tenderness being probably due to intermittent pressure of the head on the uterine wall. An occipito-posterior presentation might sometimes be diagnosed by the fact that when the back was on the right the shoulder could not be felt. This fœtal position was suggested also by failure of the head to descend after the thirty-sixth week in a primigravida, in whom the head ought to fix from the thirty-sixth week onwards. Miss J. Partridge had devised a method of estimating the mobility of the pubic arch, the examiner placed a finger under the pubic arch of a standing patient who raised her legs alternately, and estimated the degree of movement of the pelvic arch. Flat pelvis was not often seen; when the promontory of the sacrum could not be felt the diagonal conjugate was immaterial, since the pelvis could not possibly be flat. The fœtal head was the best pelvimeter; Monro-Kerr's method of pushing the head into the pelvis after the thirty-fourth week would show whether there was disproportion. Another method, preferred by patients, was to push the head down into the pelvis with the patient lying on her back, and to observe the ridge formed above the pubis. X rays were not of much value in assessing degree of disproportion, but would show whether the head was central and well flexed, and whether it had entered the pelvis. Placenta prævia should be suspected when a souffle was heard at *one* side of the abdomen on auscultation, except when the placenta was posterior, but this was uncommon.

If disproportion was slight, the practice at the Royal Free Hospital was either to induce labour with drugs, or to let the case go to term. Induction was never performed before the thirty-eighth week. If the head could not be pushed into the pelvis, induction was not performed, but a trial labour was allowed; in many cases normal delivery resulted. If drugs were used for induction and vaginal examinations avoided, Cæsarean section could always be performed if necessary; but if bougies were used, delivery had to be completed by the vaginal route. Most breeches turned themselves if left alone. Version should not be attempted until the thirty-sixth week. If the fœtus turned easily it would probably have turned without assistance; if not force must not be used since the legs were probably extended. To turn a breech which had descended deeply into the pelvis, the patient should be placed in the Trendelenburg position; the examiner should never try to push up the breech from below. A transverse presentation was usually a breech in the act of turning, and was seldom persistent. Where the pelvis was asymmetrical—as a result of hip disease, for example—a trial labour should be allowed; the head might enter the pelvis in the wide diameter, and all would be well; if not, Cæsarean section could be performed. Small fibroids seldom gave rise to trouble at labour, but larger fibroids might degenerate and require enucleation; permission should always be obtained to perform hysterectomy if necessary. It was surprising how many low fibroids would get drawn up out of the way before labour, but if a fibroid was impacted in the pelvis Cæsarean section should be performed at term and the tumour enucleated. Out of a series of 182 cases of Cæsarean section, Dame Louise said, she had only performed the operation once in a case of eclampsia. She treated mild cases of eclampsia with rest, fluids, and a carbohydrate diet; the bowels were kept well open and a mixture containing sodium calcium lactate, sodium bicarbonate, and potassium citrate was given; vitamins in the form of marmite and adexolin were added to the diet. In severe cases colonic lavage was also carried out and rest in bed enforced. In cases of post-partum hæmorrhage, the usual emergency measure was to place a fist in the anterior fornix of the vagina, and to press the uterus down against it by means of the other hand on the abdomen; it was much better to pull the uterus upwards, thus putting the vessels on the stretch, and diminishing the blood-supply. In hospital it was customary to use an intra-uterine injection of warm glycerin. Dame Louise showed a film of normal labour, taken by herself and a colleague.

Exercises Before and After Delivery

Miss M. RANDELL, with the assistance of a member of her staff at St. Thomas's, and one of her students, gave a demonstration of exercises for the pregnant and post-parturient woman, devised by her many years ago in association with Dr. J. S. Fairbairn. In planning the exercises attention had been paid to the circulation—general, abdominal, and pelvic. Other exercises were meant to stimulate lactation and to develop musculature, so that the convalescent patient would not be exhausted by standing and walking.

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the section of pathology on Jan. 6th Dr. J. LAIT showed a specimen of

Double Tumour of the Breast

The patient, a married woman aged 54, with two children, first noticed in June, 1932, a small swelling over the manubrium sterni.

About this time she complained of some pain above the left collar-bone. The swelling increased in size, and she was admitted to hospital in September, 1932. There was a red, tender swelling the size of a walnut fixed to the anterior surface of the sternum. A small firm nodule was noticed in the left breast, and some small firm glands in the left axilla. Radiography of the sternum suggested that there might be an abscess in the bone. An incision was made and a solid tumour was found growing from the sternum. It was decided to remove the breast and clear out the axilla; at the same time as much as possible of the sternal tumour was removed. There was aseptic healing, and X ray treatment was applied to the sternum. The patient returned home in November, and was now well and had no pain, but reported that there was some increase in the thickening over the sternum.

On histological examination, Dr. Lait said, there was found: (1) tuberculosis affecting a gland in the axilla; (2) endothelioma of lymph tissue on the surface of the sternum, in the gland, and in the breast; and (3) early scirrhous cancer of the breast, with the development of one or two secondary foci in the same gland. When the section was cut two appearances were visible, one an obvious scirrhous carcinoma, and the other a rosette arrangement of cells. It was possible for endothelioma to simulate carcinoma very closely. The case was one of early scirrhous cancer of the breast and, in addition, early endothelioma of the breast.

REVIEWS AND NOTICES OF BOOKS

The Principles and Practice of Rectal Surgery

By WILLIAM B. GABRIEL, M.S., F.R.C.S., Surgeon to St. Mark's Hospital and to the Royal Northern Hospital. London: H. K. Lewis and Co., Ltd. 1932. Pp. 248. 20*s*.

THIS manual of rectal surgery is welcome. It is of just the right size; not too large to be read, and yet not too small to supply an adequate account of its subject. Mr. Gabriel has done well to dispense with those long anatomical descriptions which fill the opening chapter of so many books of this kind. Indeed he is in some places almost too economical of words—as, for example, where he describes the treatment of fistula in two stages (p. 93). The necessity for leaving the sphincteric part of the fistula to a second operation will not be admitted by some older surgeons, and it would be interesting to know on what grounds this explicit recommendation is made. The treatment of fistula is always a lengthy process, and to divide it into two stages with an interval of "a few weeks" is an innovation which will not be lightly accepted by the patient. The account of tuberculous fistula is excellent, though the statement that "If a fistula of this type occurs in an adult between 18 and 30, its tuberculous nature is certain, *especially if the occupation of the patient is that of a clerk*," is too dogmatic in the passage we have italicised.

Nearly every chapter is of interest, and those on the treatment of procidentia in adults and on fissure are notable. The alcohol injection method for prolapse in children is not apparently used by Mr. Gabriel. His operative procedure for fissure will be thought too extensive by some surgeons, especially as, since we are told, the external wound sometimes splits open on exertion a few weeks after it has healed. This is not surprising as, judging by diagrams, a triangle of skin with a base approximately 2 in. wide is removed from behind the anus. The chapter on carcinoma recti reveals the fact that Mr. Gabriel prefers when possible to do a perineal excision, and for higher growths has found perineo-abdominal much superior to abdomino-perineal excision. There is a slip in diction on p. 188 where it is written of the perineal dissection that "great care must be exercised not to extend the dissection anterior to the prostate"; presumably this means that the prostate should not be encroached upon. Mr. Gabriel mentions but does not recommend conservative resection of the rectum; yet there are patients who would prefer the greater risk of recurrence if they could escape a colostomy, and Prof. Grey Turner's results show, as do those of some continental surgeons, that some patients survive for many years.

This is an attractive book, well printed and illustrated. It fills a definite gap in English surgical literature, and we are grateful to the author for having written it.

Functional Disturbances of the Heart

By HARLOW BROOKS, M.D., Attending Physician, Bellevue Hospital, New York. London: J. B. Lippincott Company. 1932. Pp. 288. 21*s*.

THE practitioner probably sees 20 cases of functional disturbances of the heart to every one case of true heart disease. He will find in this book pronouncements which bear the stamp of wide experience and understanding, especially in connexion with the relation of disturbances of the cardiovascular system to the nervous system and the endocrines. Though they do not endanger life, functional conditions often entail far more mental and physical suffering than do any forms of organic disease, with the exception of angina pectoris; and because of the annoying character of the symptoms they cause constant uneasiness if not alarm. A large section of this book is devoted to a detailed consideration of the condition described as neurocirculatory asthenia. In his account Dr. Brooks draws largely on his war experiences, which has enabled him to understand and assess the importance of this condition to society and to the individual. He shows in a preliminary historical survey that references are to be found to its incidence during the Civil War in America. An illuminating section deals with cardiac neuroses, notably the psychological aspect. Some statements, however, will certainly meet with criticism. For example, Dr. Brooks observes in his opening paragraph on pain in the præcordium that "it is the present tendency of physicians to consider most of these cases of unaccounted precordial pain as tentative instances of angina pectoris"; this is surely too sweeping. The views here expressed on cardiac exhaustion are contrary to those generally held. The book is, however, in accordance with modern teaching in essentials, and can be commended to the practitioner.

Skin Diseases and Nutrition

Including the Dermatoses of Children. By ERICH URBACH, M.D., Dozent in Dermatology and First Assistant to Prof. W. Kerl, University Clinic for Skin and Venereal Diseases, Vienna. Authorised translation by F. R. SCHMIDT, A.B., M.D. Vienna: Wilhelm Maudrich. 1932. Pp. 242. $7.

DIETETICS have always been recognised as a factor in the treatment of skin diseases, but so far there has been little exact knowledge to guide our instructions to the patient or his nurse. Dermatologists will therefore welcome the appearance of this manual. The translator has overcome the difficulty that not only the diets but their constituents differ widely in different countries with great skill. His book is divided into two main parts, of which the first contains a dissertation on the effect of nutrition on the chemical structure of the skin, and on its biological reactions to diet. The diseases due to malnutrition are considered in detail; a section is devoted to the dermatoses due to alimentary infections and intoxications, and others discuss dermatoses caused by disease or dysfunction of the digestive tract, metabolic disturbances, and nutritive idiosyncrasies. In the special part the diet advised in a number of selected skin conditions is considered in detail, and the concluding section deals with food-provoked skin disease in animals. A useful supplement includes a mass of practical information on such subjects as the normal weights of growing infants, the use of food charts for the preparation and calculation of dietaries, and a table of weights and measures.

The subject matter makes somewhat heavy reading for the clinician, and the constant citation from the works of other authorities is rather disturbing. In some cases such extracts seem redundant, in others mutually contradictory. Undoubtedly, however, it is

a book which every dermatologist will do well to study, and a copy should be available for the practical guidance of dietitians in the larger clinics and hospitals.

Diseases of the Nose, Throat, and Ear

Third edition. Edited by A. LOGAN TURNER, M.D., LL.D., F.R.C.S.E., Consulting Surgeon, Ear and Throat Department, Royal Infirmary, Edinburgh. Bristol: John Wright and Sons. 1932. Pp. 465. **20s.**

THIS book was originally produced, in 1924, as the joint work of those engaged in the teaching and practice of the specialty in the Edinburgh Medical School. It was intended as a tribute to the memory of Dr. W. G. Porter, whose manual had passed through three editions before he was killed in 1917. Dr. Logan Turner has had the assistance of Mr. W. T. Gardiner in the section on diseases of the nose, while Dr. Douglas Guthrie has been responsible for that on the pharynx and nasopharynx; Mr. J. D. Lithgow writes on the larynx, Mr. J. S. Fraser on the ear, and Mr. G. Ewart Martin on the chapters on endoscopy and diseases of the œsophagus. The book shows little alteration from the text of the second edition, issued in 1927; 16 new illustrations in the text and seven new plates have been inserted to the advantage of a work which before was notable for the excellence of its pictures. The chief addition is a description of the physiology of the otolith apparatus. The book is only slightly increased in size, is well and clearly written throughout, and the teaching is sound. It remains one of the best text-books on its subject in the English language.

Physical Therapeutic Technic

By the late FRANK BUTLER GRANGER, M.D. Second edition, revised, by WILLIAM D. MCFEE, M.D., Visiting Physician, Department of Physical Therapy, Boston City Hospital. London: W. B. Saunders Co., Ltd. 1932. Pp. 436. 32*s.* 6*d.*

IN preparing the second revised edition of this book Dr. McFee has kept in view the desire of the late Dr. F. B. Granger to instruct the practitioner who wishes to administer physical methods of treatment on occasion without making a specialty of the subject. The general plan of the book remains the same, though a few additions have been made. Among them is a new chapter on physical therapy in diseases of the ear, nose, and throat, contributed by Dr. George R. Rice. Dr. McFee has added some notes on experiments with diathermic currents on animals, which were conducted in order to ascertain the degree of heat which could be produced in different organs.

The part of the book which will provide most interest for readers in this country is the index of diseases, which may satisfactorily be treated by physical methods. In describing treatment for each disease the author has made it his aim to answer the questions, "What, where, how much, how long, and how often?" The forms of treatment most often prescribed are electrotherapy and ultra-violet ray therapy. Massage and hydrotherapy receive scarcely adequate attention. Under the heading hypertrichosis the use of X rays is rightly condemned, and the removal of superfluous hairs by electrolysis is described. A method of treatment by fulguration is also noticed; the skin around each follicle is sparked until it acquires a greyish discoloration, and the hair can then "be forcibly pulled out." If force has to be used in extracting the hair it does not seem likely that this form of treatment can destroy the follicle. The book is beautifully prepared. Several illustrations, notably pictures of apparatus and of patients under treatment, could have been spared, since they give no information of use to the medical reader.

Gynäkologische und Geburtshilfliche Diagnostik

In Tabellenform. By Prof. Dr. HEINZ KÜSTNER, Leipzig. Munich: J. F. Lehmann. 1932. 65 tables. Mk.11.40.

THE author of this small book maintains that a general practitioner's interest in medicine is becoming limited to diagnosis because adequate treatment requires special apparatus and equipment. He has therefore thought fit to compile a series of tables which describe the various diseases and abnormalities met with in gynæcology and obstetrics, and indicate their clinical features and pathology. So far as the book goes the result is satisfactory. The illustrations are exceptionally good, and include some beautiful coloured plates. The tables indicate in column form notes of symptoms, physical signs, pathology, and prognosis, and the whole field is covered. The obvious objection to this scheme is that practitioners get more help from a symptomatological approach rather than from notes on individual diseases.

The work should serve as a useful cram book for final-year students. It is essentially a German counterpart of the lists of causes and diseases which are popular in the medical schools of this country.

The Marketing of Literary Property

By G. HERBERT THRING. With a letter to the author from Mr. G. BERNARD SHAW. London: Constable and Co., Ltd. 1933. Pp. 242. 7*s.* 6*d.*

THE literary property of the medical profession is to-day large, for the specialisation of the calling is multifold, and the impulse to express the personal view is widely felt. The property though imposing in the mass is not necessarily valuable to individual owners, and this is inherent in the circumstances giving rise to much of it; for, speaking generally, it is the special subject that asks regularly and often for a record of developments along particular lines, while the more the subject is special the less will its literature be in common demand. And, unfortunately both for author and publisher, the production of a scientific treatise is as costly as, and usually much more costly than, that of a popular book.

Mr. Thring was for 30 years secretary of the Society of Authors, and no one can be better qualified than he to write a book on literary property, its value, and the methods for its disposal. He has set out here the copyright law of this country and our Dominions, and of the United States, with a chapter on the international position. He has analysed the various forms of contract which prevail in the publishing of books, and has set out under the obvious headings the points which have to be considered in dealing with different categories of literary production. There is no chapter that applies in particular to medical authors, but the explanations clause by clause of certain of the agreements that medical authors may be invited to sign afford valuable information. In a wise and amusing prefatory letter Mr. Shaw desires a wide circulation for the book, and the book deserves it.

THE LANCET

LONDON: SATURDAY, FEBRUARY 11, 1933

THE MIND IN UNEMPLOYMENT

AMONG the evils which unemployment brings in its train none is more alarming than impairment of mental health in the workless population. Something has been done of late in this country to counteract such influences by the provision of training centres, opportunities of recreation and physical exercise, organisation of unremunerative but satisfying work, and other schemes, such as those initiated by the Society of Friends. But there has been little precise information available about the form of ill-health chiefly found among the unemployed, or about the circumstances in which it is most likely to develop. Some studies that are now being carried out on a London group of unemployed suggest that neuroses are seldom found where there has not previously been evidence of a definite disposition to such disorders in response to any social or individual stress. It is not only in the form of well-defined neuroses, however, that the results of enforced idleness manifest themselves. There are numerous less obtrusive deviations from the normal balance of the personality that are the almost inevitable outcome of insecurity, dependence, and lack of satisfying occupation. These deviations may most strikingly be encountered where occupation had previously been constant rather than casual, and there had therefore been greater security; where, moreover, the work had made sufficient demands on the capacity of the worker to afford him grounds for a feeling of worth and adequacy.

In a valuable pamphlet[1] just issued by the National Committee for Mental Hygiene in the United States, Dr. GEORGE PRATT sets out the responses to economic adversity which are most frequently found, and the means by which they may be combated. It is addressed not so much to physicians, who may be called on to deal with definite mental disorder, as to social workers, nurses, and those who administer relief on official or voluntary bodies. They it is who are daily in contact with hitherto normal and on the whole contented people who are now unwillingly obliged to change the habits of their lives, and are deprived of their usual outlets and means of satisfaction. Where there is danger of a gradual deterioration of morale and the development of apathy, despair, self-pity, or resentment among the unemployed, it is necessary that those who attend to their material needs should also take into account those psychological factors which are of the utmost importance for the future. They must recognise that truculence or invalidism may be understandable responses to a changed environment and not merely the expression of a habitual antisocial attitude or of a psychopathic personality. The situation is not dissimilar from that which obtained during the late war, with its prolonged and almost intolerable stresses to which many proved unable to adapt themselves. The present troubles may be less terrifying and less violent than those of war, but they are, for the continuously unemployed, insistent and without abatement or lull; they occur in the setting of daily life and are associated with subtle but wounding conflicts within the family. A morose irritability or a gloomy resentment is often visited upon the immediate relatives though it is primarily directed against the social conditions which have created their insecurity and misery. The psychological play in such a situation is not far to seek; it is described very simply in Dr. PRATT'S brochure.

The manner in which the social worker or administrator of material relief can take a part in diminishing these evil effects of unemployment is, as Dr. PRATT points out, more a question of his or her habit of mind and freedom from emotional entanglement than of any active interference. Where interference is required it will generally be in the presence of deviations from health so severe as to require psychiatric attention. But the great mass of depression, suspicion, and resentment which is the fruit of unemployment will yield in some measure to sympathetic (not sentimental) understanding, and sometimes to advice. The part of the general practitioner in providing such mental hygiene is difficult to over-estimate. But equally important, however, are those measures for which the community, rather than individuals, must be responsible, and which provide means of occupation and recreation, thus keeping alive self-respect and preventing a corroding dissatisfaction. It will, in most cases, be imperative that these activities should be begun by outside agencies, rather than by those who will benefit from them, for in the sufferers initiative has often become weak after months or even years of unemployment, and there will have been little or no preparation for the use of a leisure that may be unwelcome and turn to tædium. The spread of schemes for dealing with the mental problems of the unemployed is a hopeful sign in this country.

[1] Morale. The Mental Hygiene of Unemployment. By George K. Pratt, M.D. The National Committee for Mental Hygiene, New York. 1933. Pp. 64. $0.25.

THE PATHOLOGY OF APPENDICITIS

ACUTE appendicitis is one of the most common and dangerous of the surgical emergencies, and there is a good deal of evidence that mild attacks of inflammation of the appendix occur much more frequently than is generally supposed. Our knowledge of the exact pathology and ætiology of the disease is, however, far from complete, and any serious contribution to their elucidation is to be welcomed. Prof. L. ASCHOFF has long been interested in appendicitis; he wrote a monograph on the subject as long ago as 1908, and his views on the pathology of the disease are now well known.

In a more recent publication,[1] he brings forward further evidence in their support. He has always held that appendicitis is an enterogenous infection arising on the surface of the mucosa, and in the present work he again denies the possibility that the disease may ever be blood-borne. No doubt this conception of the process is correct in the majority of cases, and ASCHOFF himself has produced a wealth of evidence in support of it; but it may be questioned whether it is justifiable to exclude altogether the possibility of a hæmatogenous infection. Twenty years ago F. J. POYNTON and A. PAINE[2] demonstrated the production of appendicitis in young rabbits by the intravenous inoculation of streptococci, and it seems unreasonable to rule out entirely the likelihood of a similar process occurring in man. Prof. ASCHOFF, however, will have none of it, and in the present study concerns himself entirely with the recognition of the organisms responsible for the lesion and their mode of action. In addition to the usual bacteriological methods, Prof. ASCHOFF has worked largely with direct smears, a valuable technique which has unfortunately been neglected in recent years. A large number of inflamed appendices were examined by him in this way, and control observations were made on normal organs removed at operation or obtained from the post-mortem room.

Briefly, the conclusions he arrived at are as follows. The normal appendix has a flora of its own which is quite distinct from that of the cæcum, and consists chiefly of gram-positive cocci and fine gram-positive rods. In smears taken from the lesions of acute appendicitis organisms having a similar morphology and staining reaction predominate, and, a point which Prof. ASCHOFF regards as highly significant as indicating their pathogenicity, these are the organisms which are most actively phagocytosed by the cells of the exudate. Cultural observations show that about 70 per cent. of acute infections of the appendix are due to one of the intestinal streptococci, pneumococci accounting for another 17 per cent.; and taking all the evidence into consideration it is concluded that acute appendicitis is due to infection of the mucosa with organisms which are normal inhabitants of the viscus. How is this infection brought about? G. RICKER has developed the ingenious theory that appendicitis is primarily due to vascular disturbances of the organ brought about by reflex irritation of their nerves, a process akin to the "chill" mechanism of respiratory disorders. In severe cases the vascular disturbance is sufficiently intense to cause necrosis or infarction of the tissue, which then becomes invaded by microbes from the lumen. ASCHOFF, however, denies that a vascular disturbance is the primary lesion; he believes that such changes are secondary to a bacterial invasion of the surface of the mucosa. By the use of the oxidase reaction he claims that such primary foci can be demonstrated in histological preparations when they might well be missed in material by the ordinary routine methods. And the study of the lymphatic system of the appendix, illustrated by really beautiful figures, which is contributed by Dr. H. SENG, bears out his contention that nothing is easier than for an infective process to spread from a small primary focus in the mucosa throughout the whole of the organ.

The actual infection of the mucosa is, ASCHOFF holds, independent of any trauma; it occurs, for example, distal to and not in the immediate neighbourhood of a stercolith. But it seems to be due to an increase of virulence of the bacteria normally present in the lumen. How this increase of virulence is brought about is quite uncertain, but it depends largely on stagnation of the contents. A regular flushing of the appendix with fæcal matter would act beneficially, for it would result in the replacement of the appendix flora by that of the cæcum, but it appears that such a flushing occurs only irregularly and imperfectly, frequently failing to extend to the distal third. Stagnation of fæces in the proximal portion of the tube would, on the other hand, favour retention of the contents of the extremity; and kinks or bends would have a similar effect. Prof. ASCHOFF presents his thesis with great skill, and supports it with a wealth of facts and illustrations, but it must be confessed that it fails to carry complete conviction. It would not be difficult to adduce contrary arguments of considerable weight; and a good deal more work will be necessary before it can be accepted as proved that the virulence of a normal inhabitant of the alimentary canal can be so raised by a moderate degree of stagnation as to render it capable of breaking down the natural defensive mechanism of the mucosa. Nevertheless, Prof. ASCHOFF has written a most stimulating work which will well repay careful study.

[1] Appendicitis: its Ætiology and Pathology. By Ludwig Aschoff. London: Constable and Co., Ltd. 1932. Pp. 150. 15s.
[2] Proc. Roy. Soc. Med. (Path. Sec.), 1912, v., 18.

THE MARKETING OF MILK

THE medical profession is unanimous in its advocacy of milk as part of the diet, provided it is clean and free from infection; but, owing to doubts as to the quality of some of our milk-supplies, it has, on the whole, hitherto thrown its influence against rather than for an increase of milk consumption. This sentence is taken verbatim from page 64 of the report,[1] which appeared on Monday, of the Milk Commission appointed last April by the Minister of Agriculture under the Agricultural Marketing Act; and the commissioners, of whom Sir Edward Grigg is chairman, are of opinion that nothing can better serve the health of the community—and incidentally the interests of the milk industry—than the removal of these doubts. Contrariwise, a sympathetic understanding, on the part of the medical profession, of the position of the producer and distributor is eminently desirable for the speedy solution of the problem of a pure milk-supply. Perhaps the most formidable obstacle

[1] Ministry of Agriculture and Fisheries. Report of the Reorganisation Commission for Milk. Economic Series No. 38. H.M. Stationery Office. Pp. 228. 6d. The members of the Commission are Sir Edward Grigg, Prof. A. W. Ashby, Mr. F. N. Blundell, D.L., Mr. A. E. Cutforth, F.C.A., and Major-General Sir Philip Nash, with Mr. J. B. Baber, secretary, and Mr. A. R. Manktelow, assistant secretary.

to its attainment is the plea of the producer that he gets so little money for his milk that he can scarcely make a living out of its production, with the corollary that it is a sheer impossibility for him to do more than he does now in the way of providing healthier stock, more hygienic premises, or greater cleanliness in collection and transmission of milk.

The milk producers point to the discrepancy between the money they get for liquid milk and the price charged to the consumers, and when the perennial milk war is settled each year between producers and distributors, by the formulation of an agreed milk price, the problem has not been solved even for the year. It has only been shelved in favour of the distributor. For it must be borne in mind that the root of the difficulty lies in the fact that there are two prices for milk: one for that sold to the public as liquid milk, the other for that sold for manufacture into milk products, loosely called "surplus" milk. The difference in price between these two kinds of milk is so great that the producer makes every effort to sell his milk for liquid consumption, and not for manufacture; and whether he can do so or not is largely a matter of geographical position. Should his milk lie within the area of supply of a large town he can market as liquid milk all he can produce, whereas if he is far away from such a market most of his milk has to be sold at the price of milk destined for manufacture. This dual usage makes the interests of the distributor dominant in any process of bargaining. The distributors will naturally prefer to draw supplies from their own neighbourhood, but, should local producers combine to get what they consider a fair price, the distributors can then go a little further afield into areas where the prevailing price is the price of milk for manufacture. Just because there is an almost unlimited field of milk production for them to draw upon, and because the farming interests have in the past been unable effectively to combine, the position of the producer has been an unhappy one. How large may be the proportion of manufactured milk appears in a survey issued not long ago by the Hannah Dairy Research Institute, which showed that of the total milk produced in Scotland only 59 per cent. was marketed in liquid form, 17 per cent. was consumed at the source, and the remaining 24 per cent. went to the manufacturers. The commissioners propose to solve the difficulties of this situation by setting up a series of boards under the Agricultural Marketing Act, with two main objects in view: (1) the strengthening of the position of producers by enabling them to negotiate as a solid body with one voice and with adequate information, and by ensuring that negotiated agreements are universally observed; and (2) the coördination of the efforts of all concerned—producers, distributors, and manufacturers—to secure prosperity for the whole milk industry of the country, with adequate safeguards for the interests of the consuming public. The organisation would include three new bodies, (1) a Central Producers' Board, (2) a Central Dairymen's and Manufacturers' Board, each with its own regional organisation, and (3) a Joint Milk Council consisting of members of these two boards, along with three outsiders. The ownership of all milk other than that sold by producer-retailers would be vested in the Producers' Board, but the Joint Council would fix from time to time the price of milk, both for liquid consumption and for manufacture. By means of a system of regional prices, and of devices to reduce inequalities, it is hoped to strike a fair balance between the prices paid for the two kinds of milk.

This is in brief the discharge by the commissioners of their duty to draw up a scheme or schemes for regulating the marketing of milk; but they have gone further in many directions on the liberty given them to make recommendations with respect to the matters investigated. They have for instance examined the consumption of liquid milk in this country, in regard to which statistical data are extremely meagre, and they estimate the present total requirements of the liquid milk market of England and Wales as between 607 and 730 million gallons, with a daily consumption of milk per head of population of between one-third and two-fifths of a pint. This estimate agrees closely with the careful study on p. 342 of this issue by Dr. JESSIE GELLATLY of the consumption of milk in some East Anglian arable farm counties. The commissioners point to some astonishing variations in the per-capita consumption in various English towns: Hull and Cardiff are surprisingly low, Bournemouth and Chichester surprisingly high. There seems however no doubt of the downward trend of liquid milk consumption throughout the country as a whole; partly no doubt as a result of the need for economy in the domestic budget, for the decline in retail milk prices has admittedly not been commensurate with the fall in producers' prices. But there is a further potent factor in the alarm aroused among the public by statements that milk is unsafe unless treated by heat and that when so treated its nutritive value is impaired. Propaganda on the part of the medical profession is regarded as deterring many parents from giving milk to their children to drink. To meet these doubts the commissioners have set before the producers, as one of the chief objects of reorganisation, an improvement in the quality of milk. Some improvement there has been in the last decade, an important factor being the recognition of certain statutory grades of milk, and the commissioners are assured that in some parts of the country at least much of the milk produced is now of Grade A standard, though not sold under that designation. They think it would be convenient now to reduce to one the number of official grades, this "special" grade to be produced under the same conditions as the present Grade A (tuberculin tested). Although not unanimous themselves, the commissioners regard it as the view of medical officers of health that the safety of the milk-supply, at least in large towns, can be ensured only if milk below the tuberculin-tested grade is efficiently pasteurised. But they fear the adverse effect of compulsory pasteurisation on the producer who lies in close proximity to consuming centres, and they state with insistence that pasteurisation can never be a substitute for clean production. When carried out it should be

under thermostatic control, and repasteurisation is held to be so undesirable as to be totally prohibited. The continued sale of unbottled milk is deprecated, but we miss in an otherwise compendious report any allusion to the paper carton which might do more than a little to popularise milk as a food.

The commissioners attach importance to a uniform and effective administration of the Milk and Dairies Order, although they make no recommendation how this is to be obtained. Finally they would like to see a whole-time chief veterinary inspector take his place in the official hierarchy of each county and county borough; some counties in which whole-time veterinary departments have been set up have already taken over the work irrespective of whether it comes under the purview of the Ministry of Health or of Agriculture, and they think a whole-time service would in the long run prove cheaper as well as more effective than the present system.

ANNOTATIONS

A B.M.A. COMMITTEE UPON MEDICAL EDUCATION

AT a Council meeting of the B.M.A. held on Jan. 25th a special committee on medical education and examination was set up upon the receipt by the Council of an emergency committee's report on the subject. Sir Henry Brackenbury, presenting that report, explained its origin as due to the recent inquiry held at Cambridge and the subsequent discussion of the problems at a joint conference between the representatives of Oxford, Cambridge, and London Universities, and of the English Royal Colleges. At that joint meeting the personnel, observed Sir Henry, was entirely composed of teachers, and the advisability of evidence being given before it by a representative of the B.M.A. was held doubtful as a too indirect method of approach. The decision, however, had been come to by the chairmen of various committees and himself that a special committee of the Association should be set up, and an emergency body had consequently produced the report which he was submitting, and which recommended the institution of a special committee. The reference to the special committee, proposed by the emergency body, was:

"To consider and report upon (*a*) the conditions that should be required for entrance upon medical studies, (*b*) content of the curriculum, the position of the various subjects therein, and their proper relationship to one another, (*c*) the nature of examination or other tests which should be satisfied prior to graduation, (*d*) whether, and to what extent, post-graduate education or experience should be required prior to registration as a fully qualified medical practitioner or licence to practise independently as such."

The procedure will be that the special committee will issue an interim report to the Council in June in order that the full document may come before the annual Meeting of Representatives in July in Dublin.

AFTER-EFFECTS OF SPINAL ANALGESIA

THERE has for long been a vague notion that remote after-effects of a nervous or paralytic kind are not uncommon following spinal anæsthesia. Most anæsthetists have heard tales of this sort, but have been unable to get hold of any definite instances or proved facts. The excellent paper read by Mr. H. K. Ashworth and the discussion which followed it at the section of anæsthetics of the Royal Society of Medicine on Feb. 3rd have done a great deal to clear up the position. The truth seems to be that serious after-effects, in the absence of errors of technique or dosage, do not occur, but that slight, remote after-effects, in the form of headaches and weakness or tingling of the legs, do occur in a very small proportion of cases. Further, it was clearly shown that in a number of cases nervous symptoms appearing for the first time at a date subsequent to an operation under spinal analgesia have been attributed to the injection without sufficient investigation. A thorough examination proves the symptoms to be due to some organic disease quite unrelated to the spinal injection, such as chronic kidney trouble or varicose veins. By following up some 270 patients during a three-year period Mr. Ashworth succeeded in bringing up for examination 30 patients who, according to their answers to his questionnaire, were suffering from remote effects following operation under spinal analgesia. Out of these 30 only seven were held after careful neurological investigation to be right in attributing their symptoms to their operative experience. Two of these patients suffered from one-sided deafness, one of whom has since recovered. Headache has been regarded as the most frequent after-effect of spinal injection, but speakers at the meeting differed widely in their interpretation of the cause of this symptom, and consequently in the treatment recommended for its prevention. Mr. Ashworth regarded headaches as due either to leakage of cerebro-spinal fluid at the site of puncture, or else to an upset of the choroidal plexus function secondary to meningeal traumatic irritation. When the latter was the cause he believed in repuncture for a cure. Several speakers, notably Dr. R. E. Apperly, believed that the Trendelenburg position carefully maintained for hours after operation, and complete stillness of the patient, obviated headache. On the other hand, Mr. E. T. Milligan stated that out-patients who were allowed to walk out of hospital after minor operations performed with low spinal injection often remained free from headache. Mr. Dickson Wright laid stress on the force of suggestion, and on the fact that headaches afflicted chiefly those who were subject to that complaint.

SURGICAL STIMULATION OF BONE GROWTH

A NEW method of stimulating the growth of bone is described by Dr. Albert B. Ferguson,[1] roentgenologist to the New York Orthopædic Dispensary and Hospital. In his preliminary report he points out that it has often been observed that a bone has recovered some of its length after a fracture with shortening, and that this phenomenon is in accordance with a general principle of bone physiology which deserves more attention than it has received. The principle is that "during the period of epiphyseal growth interruption of the medullary blood-supply to the metaphysis without interruption of the periosteal blood-supply to the end of the shaft produces an increase in the speed of longitudinal growth of the metaphysis affected." Ferguson's paper is designed to show the surgical application of this principle to secure stimulation of growth in suitable cases. In children, after

[1] Jour. Amer. Med. Assoc., Jan. 7th, p. 26.

osteotomy of the tibia, the upper end of the fibula was usually found to be short in relation to the tibia, which suggested that interruption of the medullary supply of the tibia had stimulated growth. A study of various cases in which such interruption had occurred was held to confirm these conclusions, and up to last October medullary section had been carried out in 16 cases in which there was shortening of the leg. The operation is a simple one, consisting of drilling into the bone half-way from the epiphyseal line or lines to the middle of the bone, inserting a knife and dividing the medulla transversely, the wound then being closed in the usual way. Whenever medullary section is done on the tibia it is done also on the fibula, the upper end of the femur not being used unless the shortening is great. Ferguson gives the order of preference as (1) lower end of femur, (2) upper end of tibia and fibula, (3) lower end of tibia and fibula, and (4) upper end of femur. A sufficient number of metaphyses are treated to gain the required length, the gain being estimated at ½ in. annually for each metaphysis treated up to the age of 14 for girls and 15 for boys. The growth seems to be more rapid in the first year after operation, but Ferguson suggests that the operation can safely be repeated after two to three years, if growth slackens. In no case treated has there been any evidence of disturbance of the bone other than the change in the rate of growth. The children who have undergone this medullary resection are to be followed up through adolescence, to determine the actual gain in length over a period of years for the various bones at various ages.

SUSCEPTIBILITY TO TUBERCULOSIS

THE theory set out in the report on Tuberculosis in the African Native[1] that certain of the natives recruited for work in the gold mines exhibit a soil hyperallergic to tuberculosis, which leads them to succumb, when on the mines, to acute fatal tuberculosis, was developed by Prof. Lyle Cummins in a communication to the Tuberculosis Association which we reported last week. This liability to contract acute infection was found to vary directly with the severity of the reactions of the subject to tuberculin tests; "positive plus" natives were more liable than "positive" natives, and the latter more liable than "negative" natives. Before a superstructure is raised on the existence here of hyperallergic soil, it must be remembered that a more obvious explanation is difficult to exclude. When they left their homes for the strange environment of mining service, the "positive plus" natives may have had more or less active tuberculous foci which had eluded even a vigilant clinical examiner. Such a vast change in environment might be expected to activate latent foci in direct proportion to their previous activity; the tuberculin reactions might be regarded as some measure both of the presence and activity of these foci. A condition of hyperallergy to tuberculosis would appear to have been postulated in contradistinction to the idea that resistance to tuberculosis may be acquired from subinfection. But the theory that resistance to tuberculosis is acquired from subinfection is hard to substantiate. Tuberculosis as an infectious disease does not display the clinical features of other acute infectious diseases, such as scarlet fever, influenza, small-pox, and the like, from which the sufferer recovers by establishing antibodies to counteract the toxins of the disease. Attacks of such diseases end in a definite way as these antibodies come to be formed. There is no such clinical course about tuberculosis to give support to the view that useful antibody reactions occur. On the contrary, evidence points to the fall of tuberculosis mortality among Europeans, and indeed among negroes in America, as being a measure of contemporaneous rise in the social standing of the communities affected. Although this outlook upon resistance to tuberculosis differs from that of an allergic soil on the one hand, or the effect of subinfection on the other, as claimed by Prof. Cummins, we note that his practical advice is the same as if it were based on different theoretical grounds—namely, that natives on gold mines must be housed, fed, and cared for on generous lines.

Another discussion reported in last week's LANCET also centred round the susceptibility to tuberculosis attributed to local damage in the tissues of the lung following upon the inhalation of certain toxic dusts. Of these silicosis has hitherto received the most intensive study, but recent work is disclosing that another form of dust, that of asbestos, is even more injurious to the physiological functioning of the lungs, while it is only second to silica in increasing susceptibility to superimposed tuberculous infection, or to the reactivation of tuberculous foci already present. Evidently, although agreement has not yet been reached on minor points, the old idea that the lungs are mechanically abraded by sharp particles of dust has been definitely discarded. The available evidence indicates that the dust particles pass into solution in the lung tissue, upon which they then react according to their chemical composition. Thus, on one hand, lime salts pass away harmlessly, while silica compounds, whether in the form of quartz or asbestos, set up a fibrous reaction which varies in type according to the kind of dust concerned. On the other hand, insoluble particles, such as dust from carborundum (silicon carbide), appear to be almost inert, and to remain in the lungs without provoking any reaction. Thus we arrive at different classifications for dust. E. H. Kettle divides them into active or inert; the former, such as silica and asbestos, produce active lesions in the tissues, and appear to exert a definite influence in assisting the growth of tubercle bacilli. Here we are dealing with susceptibility to tuberculosis based upon either a physical interference with the functioning of the lung tissue, or the presence of a foreign element favourable to the tubercle bacillus, or, possibly, upon both combined. The further the study of the pneumoconioses goes, the more evident it becomes that the effects of each dust must be studied separately, especially in relation to its effect on susceptibility to tuberculosis.

[1] See THE LANCET, Jan. 14th, 1933, p. 100.

THE HOUR OF BIRTH AND DEATH

IN a study of maternal mortality and stillbirths in New York State, J. V. Deporte[1] found that neither live births nor stillbirths were spread evenly over the 24 hours. The maximum number of live births was recorded between 3 and 6 A.M., exceeding by more than 40 per cent. the minimum between noon and 3 P.M. There were relatively fewer births in the three groups between noon and 9 P.M. than at any other time. In an analysis of very much more extensive material (the 350,106 live births registered in Switzerland between 1926 and 1930), Dr. E. Jenny[2] finds a very similar distribution. Whereas nearly 100,000 of these births took place

[1] Maternal Mortality and Stillbirths in New York State, 1915–25. New York State Dept. of Health, 1928.
[2] Tagesperiodische Einflüsse auf Geburt und Tod. Schweiz. Med. Woch., Jan. 7th, 1933, pp. 15–17.

between 3 and 9 A.M., only 75,000 are recorded as taking place between 3 and 9 P.M. As with the New York figures, the maximum is at 3 to 6 A.M., and exceeds the minimum by nearly 40 per cent. It is at these hours that metabolism is at its lowest, and temperature and pulse-rate reach their minimum. On the other hand, the distribution of stillbirths, according to Deporte's somewhat limited figures, is precisely the reverse. Most of the stillbirths, he found, occurred during the day, the maximum number falling between the hours of 9 and 11 A.M., and the minimum between midnight and 2 A.M. Measured as a percentage of total births the stillbirth rate was highest (4·7 per cent.) between 3 and 5 P.M., greater by nearly 60 per cent. than the minimum (3 per cent.) between midnight and 2 A.M. Jenny provides no figures for stillbirths, but he has analysed 12,099 deaths (at all ages) registered in Aarau between 1894 and 1929. The distribution over the 24 hours is much less variable than with the births, though there is a suggestion of two maxima, one at 7 A.M. (as night turns to day), the other at 5 P.M. (as day turns to night). The numbers are too small to be conclusive, and, as Jenny points out, the combination of all ages and all causes of death may make the material heterogeneous and obscure the issue. He suggests that knowledge of the hour of death for individual causes would emphasise the special hours of risk, and be of assistance in treatment of the sick.

THE EPIDEMIOLOGY OF CHANCROID

Dr. Albin Proppe,[1] of the dermatological department of the Berlin-Britz Municipal Hospital, draws attention to the sudden outbreak of chancroid which occurred in Germany in 1928. The whole country was not affected, but increased incidence of the disease was specially noted in Berlin and the Ruhr and Lower Rhine districts, as well as in Bremen, Altona, Königsberg, Gleiwitz, Reichenbach, and Dresden. On the other hand, large areas of Central Germany such as Hanover, Brunswick, Magdeburg, Leipzig, and Chemnitz, as well as Mecklenburg, Breslau, and the whole of South Germany entirely escaped. In the Berlin-Britz Hospital a chancroid wave was first noted in April, 1928, and in August reached its first peak, which was followed by a second in September and October, 1929, and a third in January, 1930. The epidemic then began to subside, though a few rises in the incidence of chancroid were still observed, the highest being in November, 1930. Since February, 1932, however, the disease appears to have almost entirely died out. Proppe alludes to similar epidemics of chancroid which have occurred in recent years in various foreign cities—for example, in Kharkov, Odessa, Prague, and Vienna in 1925–26, Belgrade and Trieste in 1926, Bucharest in 1926–27, Moscow in 1927, Vilna in 1929, and Hungary in 1929–30. Although chancroid is regarded by many authorities as a filth disease, Proppe found that the incidence of lousiness in his chancroid patients was no higher than in those suffering from gonorrhœa, being about 10 per cent. in each group. On the other hand, there was some evidence that in comparison with syphilis or gonorrhœa, chancroid had been contracted from prostitutes in an unusually high proportion. Bruck's observation that women may be carriers of the Unna-Ducrey bacillus without any clinical evidence of chancroid should be regarded with caution, in view of the fact that Pfeiffer's "Streptococcus urethræ" may easily be mistaken for the causal organism of chancroid. Although the cause of the epidemic is not entirely explained thereby, the disease appears to have been introduced into Germany by sailors coming down the Rhine who had been infected in Dutch ports. A similar introduction of the disease from abroad had occurred at St. Etienne in 1926, when out of 109 chancroid patients 64 were foreigners, most of whom were Poles.

[1] Dermat. Zeitschrift, 1932, xxxv., 35.

ARTIFICIAL MENOPAUSE

MOST gynæcologists prefer not to remove both ovaries when performing hysterectomy for non-malignant conditions before the climacteric. On the other hand, some have advocated extirpation of both ovaries with the uterus, because they believe that the subsequent surgical menopause, though more severe, is shorter and therefore preferable. J. V. Sessums and D. P. Murphy [1] have studied the after-histories of 91 patients subjected to hysterectomy, with conservation of one or both ovaries, before the age of 36. They found that 40 (44 per cent.) of these patients developed hot flushes before the age of 40; whereas of 52 patients in whom the uterus and both ovaries had been removed, 42 (81 per cent.) developed hot flushes before that age. The flushes were described as severe by 37 per cent. of the first group, and by 73 per cent. of the second group of patients. The onset of menopausal symptoms was thus earlier in those who had had both ovaries removed. Conclusions about the duration of menopausal symptoms require observation over a very long period; only 25 per cent. of the 82 patients who experienced flushes described them as having ceased. In this series apparently more of the patients with ovaries intact described the flushes as having ceased; yet the "average duration" of the menopause is given as shorter in the group with bilateral oöphorectomy, being 7·2 months on the average in these cases. This conclusion should be regarded with some reserve. The dates of operation are not given, however, though the "total time" of the period of observation extended over 14 years. It is possible that some of the cases have not been under observation for anything like this period. We are informed that surgical menopause following radium treatment may be prolonged; some patients, followed up over a period of as long as 10 or 11 years, still have flushes. It is questionable whether much can be gained by attempts to estimate the duration of menopausal symptoms without differentiating them into mild or severe. Occasional flushes are of little importance, and they may continue over many years. It would be more useful to ascertain the time during which a patient goes on having flushes every day; but not all patients seem to be much troubled by the symptom, even if it occurs frequently. Doubtless the psychological attitude of the patient is a big factor in determining the severity of symptoms following artificial menopause, and this can be greatly influenced by that of her doctor. On the whole, gynæcological opinion seems to favour the retention of some ovarian tissue in a premenopausal hysterectomy.

[1] Surg., Gyn., and Obst., 1932, lv., 286 and 728.

BRITISH SPAS

A NEW edition has appeared of the handbook of the British Spas Federation,[2] compiled from the reports of the local medical committees for the use of the medical profession. Sir Humphry Rolleston supplies a short introduction, and there is a foreword

[2] The Spas of Great Britain: the Official Handbook of the British Spas Federation. Bath: Pitman Press. 1932. Pp. 230.

by the Committee for the Study of Hydrology in Great Britain. The committee call attention to the fact that there is in England little or no provision made in medical education, under graduate or post-graduate, for the study of this form of treatment. For more than ten years they have endeavoured to fill this gap by periodical illustrated lectures and by conducting parties of medical men and students to the spas. This attempt to make the subject better understood by the medical profession has been made financially possible by the British Spas Federation.

This handbook contains a variety of information, geological, historical, topographical, and—more important—medical indications. The latter are of chief interest to the practitioner, and might perhaps have taken a more prominent place in the text. The judicious comparison of a group of spas may be of value. The biological properties of waters and muds are now much discussed on the continent. Certain observations are here recorded on the action of the Buxton waters on vegetable growth, and on the bactericidal action of the old sulphur water at Harrogate. It would be interesting to learn whether the waters of Bath, which, coming from a depth of some 5000 feet, shows signs of any biological properties of this nature. From Cheltenham comes a discussion on the general actions of baths; the aeration and whirlpool baths, devised in England during the war, are regarded as stimulant remedies in atonic nervous disorders. No mention is made here or elsewhere of sedative baths in the treatment of cardiovascular and nervous cases. Very little information seems to be available about the composition and mode of action of peats and muds, which are more and more employed in bath establishments in England, especially for rheumatism.

It is regrettable that some British spa authorities still think it necessary to attach foreign names to most of the baths in common use; it would appear to the uninitiated reader that the Scotch douche is the only one which belongs to these islands! The medical committees have presented a varied and interesting collection of information. The resources of civilisation are evidently by no means exhausted at the health resorts, and there is still scope for British energy and enterprise.

PROBABILITIES IN MODERN WARFARE

SINCE the responsibility for the care of casualties in any war falls upon doctors, the medical profession has a special interest, apart from that of the thinking citizen, in the forms which warfare would now take. Last year the Inter-Parliamentary Union published the views of 19 experts belonging to nine different countries on the probable characteristics of the next great war; this book has just been republished in a popular edition [1] and deserves far more attention than it received on its first publication. To say that it is a terrible book might give a wrong impression, since it is only by exercise of imagination that the presentation of the facts, figures, and opinions can be translated into human terms. The impression is left that a future war would not merely be an intensified repetition of the last one, but that it will be of quite a different character. Just as the old wars between barbarian tribes were wars of extermination so, after passing through the stage of professional armies and of the "nation in arms" as exemplified by the late war, the advent of air and chemical warfare has made strategy revert to the primitive idea of extermination; the nation in arms will be the nation under fire—a very different matter. The results of the use of modern air power would be, in effect, to bring a whole country within range; chemical agents would be of immense use against an unprotected civilian population; the destruction of the "nerve centres" of government and industry are almost certain to be the immediate objective. The question remains whether their destruction is possible. "In the course of manœuvres 250 aeroplanes took part in a night attack on London. According to military estimates only 16 of those were discovered by searchlights, and even under the most favourable circumstances it is not certain that even these would have been all shot down." As to the results, Prof. Langerin stated that 100 aeroplanes, each carrying a ton of gas, could cover Paris with a gas cloud 20 metres thick in one hour. Besides gas, thermite bombs weighing only 1 kilogramme each can develop a temperature of 3000° C. and burn through steel, while no extinguishing appliance has yet been invented. With such weapons used under the new strategic conception that "to attack the civilian population is now a basic principle of modern warfare" (Major Endres) a further war might well become mass murder of the civilian population rather than a conflict between the fighting forces.

The possibility of "bacteriological warfare" has been studied by a commission of the League of Nations on Chemical Warfare,[2] and the conclusion is that while there is a possibility of the destruction of crops by parasites distributed by air over a large area there is no immediate likelihood of any use being made of the bacteriological weapon against enemy personnel. Certainly on a priori grounds it is difficult to imagine conditions which could fulfil the four obvious postulates for its use: (1) the effects must be disabling, at any rate, temporarily; (2) it must be communicable in the first instance to the enemy; (3) it must spread rapidly; (4) the side employing it must be protected either by complete isolation or by some form of preventive or curative agent unknown to the enemy.

[1] What would be the Character of a New War? London: Gollancz. 1933. Pp. 412. 5s.

THE MEDICO-LEGAL SOCIETY

THE Medico-Legal Society has signalised the thirty-first year of its existence by issuing a new journal.[3] In future the transactions of the society will be issued quarterly instead of yearly and will be combined with book reviews and hitherto inaccessible material such as abstracts of foreign literature of medico-legal interest. Dr. Gerald Slot and Mr. Everard Dickson are the honorary editors. Lord Riddell, the president of the society, in a foreword, expresses the hope that the journal will in time provide a complete survey of medico-legal and criminological subjects. The first number promises well. The opening paper by Sir John Collie on medico-legal practice is in light and anecdotal vein, but Dr. F. J. McCann provides more solid fare in his exhaustive survey of impotence in the male and female, a paper which contains much of value to the practitioner as well as to legal and medical specialists in the courts dealing with matrimonial causes. In a retrospect of the history of the society its founder, Mr. Henslowe Wellington, recalls with justifiable pride the many eminent men who have filled its offices, including Lord Justice Atkin, the late Lord Russell, Dr. Stanley Atkinson,

[2] Document A.16 (1924), ix., of the League of Nations.

[3] The Medico-Legal and Criminological Review. Published for the Medico-Legal Society by Bailliere, Tindall and Cox, London. Vol. i., Part I, January, 1933.

and Sir Samuel Evans. He notes that three of the original office-bearers of 1902, Sir William Collins, Sir Walter Schröder, and himself, are still active members.

There are special reasons why the Medico-Legal Society should attract influential and widespread support. The varied duties which are included under the term "medico-legal" are carried out in England with great ability, but under considerable handicaps. There is no centre for teaching, research, collection and storage of specimens, or the performance of laboratory tests, such as can be found in the great cities of almost every other civilised country, including that part of Great Britain which lies north of the Tweed. The society has for long filled at least a part of the gap, in that it provides a meeting-ground where doctors and lawyers can discuss in amity those thorny problems which too often arouse mutual antagonism in the more heated atmosphere of the courts. Doctors and lawyers have everything to gain personally by a better understanding of each others point of view and perhaps the lay public, over whose bodies, live or dead, the forensic battles rage, stand to gain most of all in the shape of sounder and better informed administration of justice. A case in point was quoted by a stipendiary magistrate in the discussion on Dr. McCann's paper, reported in the new journal (p. 53). An application for an affiliation order was made to the court over which he presides against a man of 69. The defendant produced a certificate with which he had been going about armed for some time and which he had been sufficiently business-like to have had brought up to date. It was signed by a surgeon who had removed his prostate gland, and stated that in consequence it was impossible for him to become the father of a child. The case might well have ended there but for the enterprise of the solicitor who represented the child's mother. He enlisted the help of the medical press and before the adjourned hearing had secured evidence that pregnancy had followed intercourse in at least one known case of prostatectomy. The learned magistrate, arguing no doubt that "what man has done man can do," granted the order of affiliation, a course which subsequent events proved to have been just. The story has several morals, not the least of these being the great value of transactions in which such cases are recorded.

OXYGEN AND CARBON DIOXIDE AS RESPIRATORY STIMULANTS

THE increased use of carbon dioxide as a respiratory stimulant has led to further investigation of its mode of action, and recent work suggests that many of the standard explanations of the effects not only of carbon dioxide but also of oxygen-lack will need to be revised. Some experiments reported in a paper [1] from the department of physiology at the Middlesex Hospital by Dr. S. Selladurai and Prof. Samson Wright, throw some light on this complicated problem. A new point of view, they say, was reached in 1927, when J. F. Heymans and C. Heymans showed that chemical changes in the blood might modify respiration reflexly, without necessarily acting directly on the respiratory centre itself. These workers, with their collaborators, concluded that acute anoxæmia stimulates breathing reflexly for the most part by acting on the carotid sinus and (to a lesser extent) on the aortic nerve-endings, and that its direct stimulant action on the respiratory centre is comparatively unimportant. Prof. Wright and Dr. Selladurai have now re-examined the action of oxygen-lack in the cat. Inhalation of various concentrations of oxygen (4 to 16 per cent.) and of nitrogen were studied in decerebrate and in chloralosed animals. With the carotid sinus nerves eliminated and the vagi cut it seems to be proved that lack of oxygen depresses the "isolated" respiratory centre. The increase in breathing which is often obtained in the intact animal appears to be wholly reflex, and depends upon excitatory afferent impulses in the sinus nerves and the vagi which overcome the direct depression of the centre. Examination of this point in greater detail revealed that the reflex stimulation from the sinuses may under certain circumstances be of greater importance than that produced by the vagi. Apparently the integrity of what Prof. Wright has called the "buffer" nerves enables the respiratory centre to withstand for long periods degrees of anoxæmia which are lethal to it when it has been isolated by section of the vagi and denervation of the sinuses. In view of these results, which confirm in the main those reached by the Belgian investigators in their work on dogs, the classical theories in which oxygen-lack is considered a stimulant to the respiratory centre can no longer be regarded as tenable. Experiments on the circulatory effects of the low oxygen mixtures used do not support the idea that fall in blood pressure is playing any important part in the results obtained.

In a second paper [2] similar detailed studies of the mode of action of carbon dioxide have been made, and here again the classical theories, which assume that the influence of this gas on breathing depends entirely on an action on the respiratory centre, will have to be revised. The results obtained are not, however, so clear-cut. In the cat it is found that denervation of the carotid sinuses usually decreases the rate of breathing and the minute-volume of ventilation—whether the vagi have been previously cut or not. It is concluded that the chemical composition of the blood stimulates the nerve-endings in the carotid sinus in the resting animal to discharge tonic excitor impulses to the respiratory centre. The response to carbon dioxide was usually reduced when the sinuses were denervated, and it was concluded that raised carbon dioxide concentrations stimulate the respiration in part reflexly from the carotid sinus. The effects of vagotomy varied somewhat in different experiments, and it is suggested that carbon dioxide may act differently on the various sensory components of the vagus nerve.

[1] Quart. Jour. Exp. Phys., 1932, xxii., 233.

EPIDEMIOLOGY OF THE COMMON COLD

INVESTIGATIONS made at the Johns Hopkins University, with the support of the John J. Abel fund for research on the common cold, include a study, by V. A. van Volkenburgh and W. H. Frost,[3] of the prevalence, distribution, and character of the minor respiratory disorders observed over a space of two years (November, 1928, to November, 1930) in 114 Baltimore families comprising a mean weekly population of nearly 500. Notification was made immediately upon the occurrence in any member of the family of any respiratory illness whatever, including those which were apparently trivial, and on report of a case a staff physician promptly visited the home and obtained a record of the illness by interrogation of the patient or (in the case of children)

[2] Ibid., p. 285.
[3] Amer. Jour. Hyg., January, 1933, p. 122.

of the mother. Each case was revisited, usually by a nurse, at short intervals until recovery. The result is a body of very full and detailed data with regard to incidence and clinical aspect. Counting all respiratory illnesses reported, the attack-rate during the first year, November, 1928, to November, 1929, was 318 cases per 100 persons observed, while in the second year it was almost the same—namely, 307 per 100—despite the fact that the first year was marked by a fairly severe epidemic of influenza. The incidence, as would be expected, does not fall equally upon each age. It is at its highest in children under 5 years of age, declines progressively to about the age of 15–19, increases somewhat between 20 and 35, and thereafter declines slowly as age increases. Though the populations in some of the age-groups are very small this course agrees with previous figures reported by J. G. Townsend and E. Sydenstricker,[4] who pointed out that the fall in incidence with advancing years is at variance with the rising death-rate from respiratory disease.

The most striking feature of the seasonal distribution is the high prevalence in the autumn, followed through the winter and spring by a series of epidemics. This confirms the previous evidence of W. H. Frost and Mary Gover,[5] which showed that during the season of higher prevalence the incidence curve exhibits a series of oscillations, each of several weeks' duration which, although irregular in sequence and magnitude, cannot be regarded as mere chance fluctuations. The incidence is not therefore, as might readily be supposed, equally spread over the winter months, but consists of a series of distinct epidemics, irregular in spacing and magnitude. Clinical data are given in detail for 1388 cases, some of the symptoms (e.g., irritability) being, perhaps, too subjective to be of very much value. The average duration of symptoms was 16 days, which, taken in connexion with the mean number of attacks suffered (3·07 per person for the year 1929–30), gives an average of approximately 49 days per person per year during which symptoms were present. In other words, on the average this population suffered from symptoms of minor respiratory disease for nearly one-seventh of the year, a figure which seems unduly high in spite of the fact that 10 per cent. of the cases under 5 years of age were complicated by otitis and 3 per cent. by adenitis. The most frequent symptoms were coryza, cough, and sore-throat, and, naturally, presence of the symptoms does not necessarily denote incapacity for work, though a quarter of the patients were confined to bed and the same proportion had fever. From this evidence van Volkenburgh and Frost conclude that the "common cold" implies more than coryza, and that the systemic reaction is more marked than is generally believed.

[4] Public Health Reports, U.S. Public Health Service, 1927, xlii., 99.

[5] Ibid., 1932, xlvii., 1815.

BACILLARY DYSENTERY IN CHILDREN

THE importance of bacillary dysentery as a cause of infantile diarrhœa in this country has often been emphasised of late years, and in our issue of Jan. 28th Dr. Eileen Harvey described five cases of sudden death (four of them in children) which she regarded as due to this cause. In each of these there was a ring of lymphoid hyperplasia and œdema around the ileocæcal valve, and *Bacillus dysenteriæ* Sonne was isolated from the stools of the sister of one of the patients who was ill at the same time. Dr. D. Nabarro and Dr. A. G. Signy[1] have reviewed the cases of dysentery seen in the Hospital for Sick Children, Great Ormond-street, from January, 1929, to December, 1932, which number 106 in all. Most of them occurred in small ward outbreaks, and in the older children the condition was usually mild; the cases due to the Sonne organism showed a mortality of 4·5 per cent., and those due to the Flexner type 10·5 per cent. The infection was recognised through the routine examination of the stools of all cases of diarrhœa admitted to, or occurring in, the hospital, both for blood and pus and by culture for dysentery organisms. Cultures were made direct from an emulsion of the fæces on to McConkey plates, and the diagnosis of the type of micro-organism was determined both by direct agglutination with prepared rabbit serum and also by fermentation reactions. Most of the cases also had the blood examined at least once for the presence of agglutinins, the authors considering that a "standard" agglutination with any of the strains of dysentery organisms to a titre of 1/125, or a strong agglutination to a titre of 1/50, was presumptive evidence of a recent dysentery infection. They emphasise the importance of using mixed strains of Sonne in carrying out these tests. Clinically, infection was usually characterised by abdominal pain followed by severe diarrhœa. The typical dysenteric stool contained considerable quantities of blood and mucus, with a minimum of fæcal matter. Tenesmus usually occurred, and malaise at onset, with a variable amount of fever. D'Herelle's bacteriophage was tried in the treatment of a few of the children, but with no special success. The effect of serum therapy also was not striking, though Nabarro and Signy recommend the employment of serum (given in repeated doses of 10 c.cm. intramuscularly) in cases which are obviously acutely toxæmic. General measures to prevent spread in the ward should involve the patients being treated as highly infectious, and no nurse who handles the stools should be allowed to prepare the food of another patient.

[1] Arch. Dis. Child., December, 1932, p. 327.

REMOVAL OF THE CORPUS LUTEUM OF PREGNANCY

EVIDENCE is accumulating that the corpus luteum is not necessary for the maintenance of pregnancy after the first few weeks. It must be the experience of a fair number of gynæcologists that the corpus luteum, or the ovary which contains it, can be removed and the pregnancy go to term. In spite of this the evidence is very strong that the corpus luteum is essential for the implantation of the fertilised ovum, and there is good reason to believe that its influence is required in the first few weeks; later in pregnancy its control of the attachment of the ovum is perhaps shared by the placenta. R. M. Corbet[2] not long ago described a case in which the ovary containing the corpus luteum of pregnancy was removed 42 days after the first day of the last menstrual period, and the pregnancy nevertheless went to term. The importance of the case depends upon the early date at which the operation was performed. On the other hand, O'Donel Browne[3] reports a case in which both ovaries were removed during the early months of pregnancy and in which the ovum died and abortion and post-partum hæmorrhage followed. Cases are on record in which both ovaries have been removed during pregnancy, in spite of

[2] Irish Jour. Med. Sci., August, 1932, p. 520.

[3] Ibid., p. 522.

which pregnancy proceeded normally (Carlton Oldfield, Essen Moller). It is well known that follicle-ripening proceeds throughout pregnancy, and that ovulation is inhibited by the corpus luteum. It is possible, if the corpus luteum alone is removed or even if one ovary is excised during pregnancy, that the removal of this inhibitory influence may lead these ripening follicles to rupture so that a second corpus luteum is produced. Some cases can perhaps be explained along these lines, although there is no evidence available to confirm the suggestion. It should be remembered that the corpus luteum develops signs of retrogression relatively early in pregnancy, and it is more than probable that its nidatory influence is restricted to the first few weeks. On the other hand its persistence until the puerperium indicates that it continues to serve some purpose, and it may inhibit not only ovulation but also the uterine contractions caused by the oxytocic hormone of the posterior pituitary. Some experiments on this point were described by Dr. J. M. Robson at a meeting of the Edinburgh Obstetrical Society on Jan. 11th. Working with slips of rabbit uterus in vitro he distinguished three stages of pregnancy: in the first half neither oxytocin nor vasopressin caused any contraction; in the second stage vasopressin caused contraction while oxytocin did not; and in the third, or terminal, part of pregnancy the reaction to oxytocin returned and gradually increased until parturition. Similar experiments were performed on strips of human uterus removed at various stages of pregnancy. None was obtained earlier than three months, but at three to five months it was found that oxytocin had no effect while vasopressin caused contraction. Subsequently the muscle became steadily more sensitive to oxytocin, and the sensitiveness reached its climax (as in the rabbit) at parturition. It is possible, Dr. Robson thinks, that the corpus luteum secretes a specific hormone, the inhibitory hormone, which acts on the uterine muscle, and which is different from the progestational hormone which prepares the endometrium for the ovum. The actions of the corpus luteum, on endometrium and muscle alike, do not occur, he believes, unless sufficient quantities of œstrin are present, and for its action on muscle more œstrin is required than for its action on the endometrium.

DETERIORATION IN THE TROPICS

MOST of the speakers in the discussion reported on p. 302 had lived in the tropics, but most of them are now living in London. The verdict of men on the spot might have been less favourable to a tropical life, and in face of breakdown they might be disposed to lay more emphasis on faults of environment and less on faults of personality. For example, in the December issue of the *Malayan Medical Journal* Mr. Kenneth Black, professor of surgery at Singapore, writes with envious enthusiasm of the benefits of a temperate climate. Times, as he says, may change, and in another 1000 years the belt of optimum climate may have shifted to Egypt and Mesopotamia. Meanwhile, however, Europeans who leave England for the tropics must expect a physical and mental deterioration which occurs independently of the onslaughts of disease, and is observed even in countries, such as Malaya, where the incidence of tropical infections among Europeans is comparatively low. Evidence of such deterioration was collected by Dr. G. H. Garlick, who, in reporting on the Colonial Survey Station making a topographical survey of Johore, stated that the graph showing the area surveyed per white man per month rose steeply at the beginning, as the man became accustomed to his work, maintained a steady level until he had been working for two and a half years, and then showed an equally steady decline until he was relieved at the end of his third year. Mental deterioration cannot be demonstrated so neatly, but it is significant that out of the total number of European government officials sent home on sick leave from the Dutch East Indies, the numbers suffering from neuroses and psychoses during the past 12 years have averaged just over 50 per cent. Prof. Black falls into line with speakers at the Royal Society of Medicine when he wonders how far this high incidence of nervous disorder is due to lack of training for self-control. Missionaries rarely get "nerves," he says, and he goes on to quote a medical authority experienced in examining people from the tropics who said that he never found neuroses in those who were really keen on their work. At the same time he urges that in Malaya three years should be the maximum tour of service for white people if they wish to keep their efficiency, mental equilibrium, and alertness. The editor of the *Malayan Medical Journal* remarks in comment that "the pendulum of lay opinion appears to be swinging from the former unjust extreme of referring to certain tropical countries as deathtraps to the other no less erroneous extreme of now regarding the same parts as health resorts."

THE COLLEGE OF PHYSICIANS

THE Milroy lectures of the Royal College of Physicians of London will be given by Dr. Robert Cruickshank on Feb. 23rd and 28th and March 2nd, the subject being Pneumococcal Infections. The Goulstonian lectures will follow on March 7th, 9th, and 14th, when Dr. Charles Newman will speak on the Physiology of the Gall-bladder and its Functional Abnormalities. Dr. C. R. Box will deliver the Lumleian lectures, on Complications of the Specific Fevers, on March 16th, 21st, and 23rd, and Dr. E. A. Carmichael the Oliver-Sharpey lectures, on the Peripheral Pathway for Sensation, on May 2nd and 4th. Prof. E. Mellanby's Croonian lectures will be given on June 8th, 13th, and 15th, the subject being Nutrition and Disease—the Interaction of Clinical and Experimental Investigations. All these lectures are to be delivered at the College at 5 P.M. on Tuesdays and Thursdays, and members of the medical profession will be admitted on presentation of a card.

WE regret to announce the death on Feb. 6th of Dr. Alfred Eichholz, chief medical inspector of the Board of Education from 1919 to 1930 and a research officer of the Ministry of Health.

INDEX TO "THE LANCET," VOL. II., 1932

THE Index and Title-page to Vol. II., 1932, which was completed with the issue of Dec. 31st, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, London, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

UNIVERSITY OF OXFORD.—Dr. G. D. H. Carpenter has been appointed Hope professor of zoology as from the first day of Trinity Term, 1933.

SPECIAL ARTICLES

OPEN-AIR COUNTRY HOSPITALS FOR CHILDREN *

BY SIR HENRY GAUVAIN, M.D., M.CHIR. CAMB., F.R.C.S. ENG.

MEDICAL SUPERINTENDENT, THE MORLAND CLINICS, ALTON, AND LORD MAYOR TRELOAR CRIPPLES' HOSPITALS, ALTON AND HAYLING ISLAND

IN modern life no feature, perhaps, is more striking than the almost universal acceptance of the value of open air and sunshine. The importance of these agents having been recognised in the treatment and prevention of disease, they are being increasingly utilised by the population at large for the maintenance and improvement of health. It is no matter for surprise, therefore, that special hospitals for the treatment of children suffering from chronic disease should be established in increasing numbers, in suitable districts in the country and at the seaside, where patients may enjoy the benefits of fresh air and of all available sunshine. It must be confessed, however, that the advance in the design of such institutions leaves much to be desired; their inmates rarely find the fresh air they need combined with comfort and shelter, and as rarely are they able to take full advantage of the sunlight. Open-air hospitals are too often draughty and cheerless buildings, damp in wet weather, cold in cold weather, unduly hot in hot weather. Balcony accommodation is often woefully deficient and badly planned. Patients who should be kept immobile have to be wheeled to reach the sunshine through narrow doorways and round awkward corners. Unnecessary discomfort to the patients, useless labour for the nurses, needless damage to furniture and fabric—those are the drawbacks of many existing hospitals.

The Ideal Open-air Ward

The ideal open-air ward should be so constructed that when completely closed it still has perfect ventilation, and when completely opened its ceiling is the sky and its walls the horizon. There must be abundance of open air but freedom from draughts or excessive movement of air; there must be free access to sunlight and yet adequate provision of shade, for in sun treatment darkness is, in my opinion, as essential as light, and excess of sunlight may be even more harmful that its lack. Warmth and comfort should be ensured, for who needs them more than a sick person, and why should a patient be deprived of what reasonable foresight can procure? Wards should be so planned that all the inmates are under constant responsible supervision; every child needs that, and none more than a sick child.

Why should we be unduly concerned with the distance between beds when not only the air in the ward, but the whole air of the countryside is at our disposal? The freest possible access of air is obtained by providing wards with walls which can be folded back at will. In windless weather all the walls may be put aside. If it is not raining a sliding roof makes it possible to open the ward to the heavens and immediately the patient, without being moved, has access to all the sunshine there is. In most wards it is usual to arrange the beds about the walls, leaving the centre of the ward free, and this is convenient too for the open-air ward in which the centre portion, unoccupied by patients, has a fixed roof provided with a ventilating louvre under which the outer portions of the roof may slide. These outer portions are made of wired vita-glass, which transmits ultra-violet radiation when the roof is lowered. The sliding roof is counterbalanced by weights, so that the only effort required in raising it is to overcome friction, and even this can be dispensed with by attaching a small water-tank to the counterweights, when the roof may be raised or lowered by simply turning a tap. Below this sliding roof are canvas blinds which may be raised or lowered to exclude sunlight or moonlight when desired. Curtains can be drawn across the folding-glass walls as required and the ward thus completely darkened. The permanent walls reach just above the level of the beds and in their lower sections are rain-excluding flap ventilators which may be open or closed as needed. Thus, in very inclement weather, when full protection is required, the sliding roofs and the folding walls may be closed, good ventilation still being obtained through the flaps; the air enters the ward at floor level, and passes out through the central louvre.

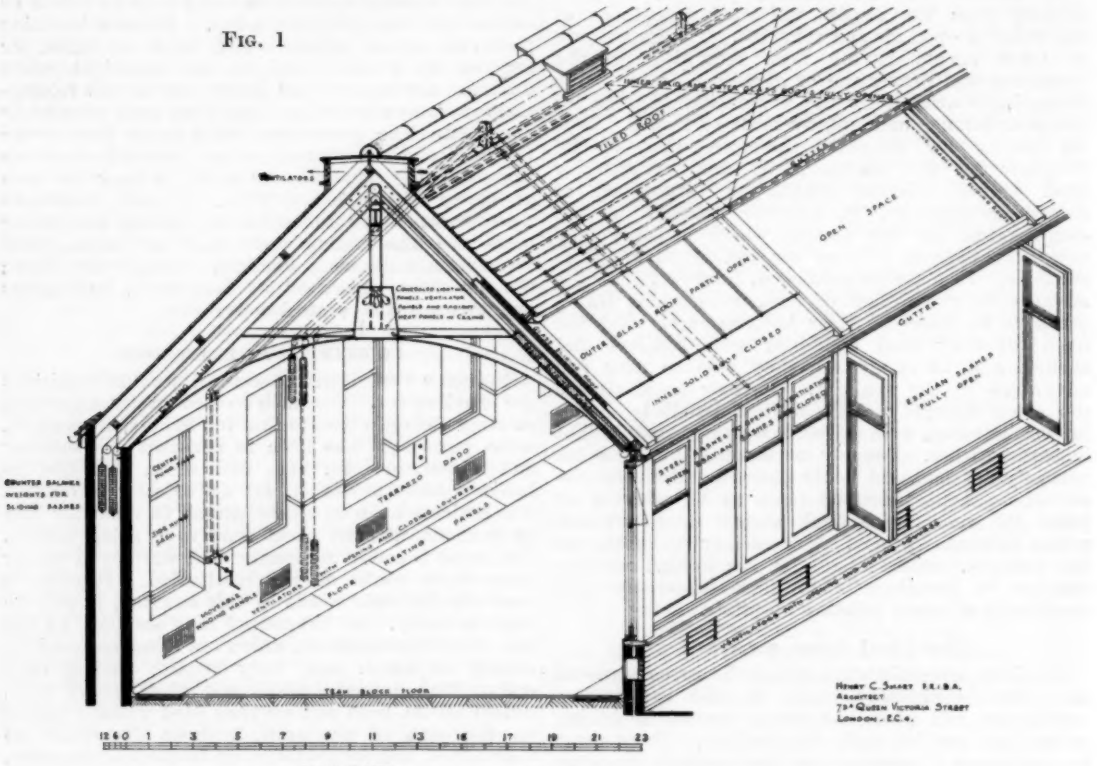
AN EXAMPLE AT BRAMSHOTT

In such a ward, it will be seen, all weather conditions are provided for. One such erected on my suggestion at King George's Sanatorium for Sailors, Bramshott, some years ago has been in constant use summer and winter, in rain, hail, and snow, and has no balcony accommodation, for no balcony is needed. The patients have complete access to open air and to sunlight without their beds ever being moved. The ward is cooler in summer and warmer in winter than other parts of the institution. Heating is desirable for such wards in this country, if only to exclude damp. At Bramshott it is obtained by the use of anthracite stoves, which are clean, economical, readily adjusted, and only require fueling once daily. The patients, adult and often heavy men, obtain all the light and air they need without labour on the part of the staff, without discomfort to themselves, and without damage to hospital property. It remains, in my opinion, the most perfect open-air ward hitherto erected; but it could be improved by having two sliding roofs, one of asbestos or copper to exclude light and afford additional protection, and the other of wired vita-glass. Such a ward represents the ideal for this climate; it is, however, so revolutionary in conception and so foreign to our notions of a hospital, as to be viewed with suspicion by both architects and governors. Nor does it lend itself readily to architectural display or give the impression of permanent durability. Nevertheless, the experience gained at Bramshott shows the design to be practical and efficient. Many variations to this plan may easily be devised. Thus the fixed wall from bed level to the ground may be dispensed with, the folding walls reaching from ground level to any convenient height and above that, rain-excluding, centrally fixed windows provided. The sliding roof may be duplicated, either the external or internal being of wired vita-glass, the other of asbestos for lightness, or of copper on wood for durability. As an alternative the roof may slide in sections laterally, but the type already described will probably prove the most practical, useful, simple, and economical.

* Based on a presidential address to the Section for the Study of Disease in Children of the Royal Society of Medicine.

The idea of these open-air wards evolved from the employment of specially designed balconies with sliding roofs constructed at the Morland Clinics. One such balcony has already been illustrated in THE LANCET.[1] They have amply justified their value, are much appreciated by the patients using them, are labour-saving and therefore popular with the staff, and have proved very economical in avoiding damage to hospital walls and furniture, which is inevitable when patients have to be wheeled from ward to balcony. Patients occupy these balconies day and night all the year round, undoubtedly to the advantage of their health. The danger of infection of all kinds is reduced to a minimum, basal metabolism is raised, appetite rapidly increases, recovery is hastened, and without question from every point of view they are advantageous to the patient, who literally lives in the open air but is sheltered from the weather as may be required.

FIG. 1



Diagrammatic section of an open-air ward.

The Treloar Hospital

In planning an open-air hospital one has not only to think of the ward, but of the general lay-out and of the accessories indispensable for the work. At the Treloar Hospital, while the open-air ward just described was not adopted in the final plan, the wards approach very closely to that ideal; they combine permanent structure and successful architectural treatment with maximum convenience and efficiency, as well as the maximum of open air and light. The wards are single-storeyed for convenience in dealing with crippled and mostly recumbent children, as well as for safety in case of fire. The lay-out is on clean and straight lines, a great advantage from the engineering side, for bends and curves in pipes encourage furring and increase the power required for distributing the water. Sewerage is simplified. Pipes and cables are conveyed in a large main trench, which is a subway under the cloisters behind the wards, readily accessible in case of breakdown.

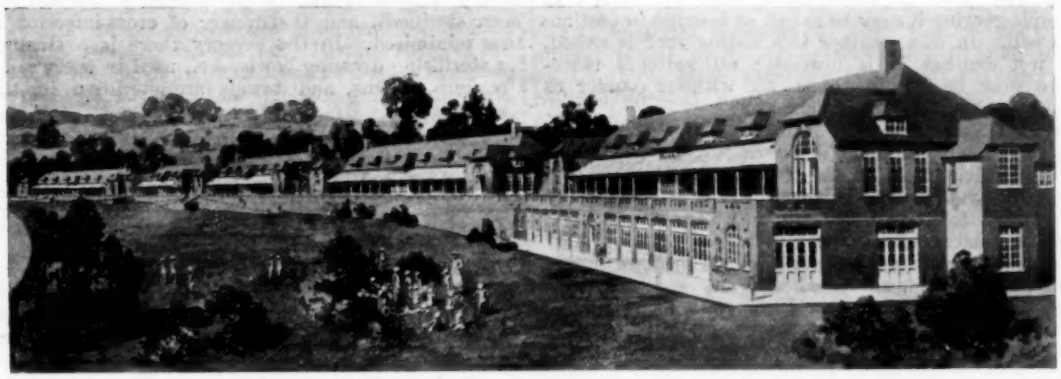
The hospital consists of five similar ward units of 60 beds each. Experience has shown us that with the type of case treated one fully trained sister is able to supervise such a unit with the assistance of probationer nurses. The Board of Education has laid down that 30 such patients may be taught by one teacher, and in order to earn most economically the educational grant for a hospital school the ward unit is divided into two similar parts, each half consisting of one large ward of 24 beds with its sanitary annexe, one small ward of four beds, and two cubicles. The small ward and cubicles are desirable for patients who are very ill, or who for some reason have to be nursed apart from the others or under different conditions. The cubicles are very useful for isolation, when a patient develops a complication such as a rash, the nature of which is in doubt, or for septic cases, which it is desirable to keep apart. This small ward with adjacent cubicles has its own sanitary annexe. Nevertheless, there is ready access to the main ward for educational purposes and for convenience in supervision and nursing.

THE WARD UNIT

In the centre of the ward unit is the sister's office, which may be regarded as the pivot of the whole.

[1] THE LANCET, 1927, i., 755.

FIG. 2



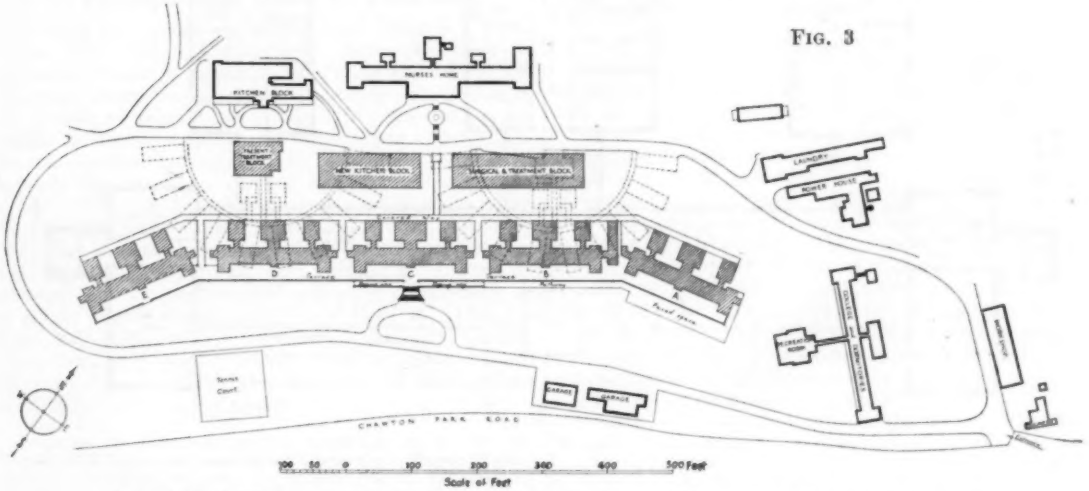
Perspective view of the completed Treloar Cripples' Hospital at Alton.

From this she can see all the patients in each ward and on the terrace outside; she controls the lighting and is in direct telephonic communication with the hospital exchange. For ventilation the wards have folding doors with Esavian fittings on the whole of their southern aspect, as a rule kept open, but capable of being closed in very inclement weather. Above these doors are windows the whole length of the southern part of the ward; these may be opened by gearing, are rainproof, and with the windows on the other side of the ward afford perfect cross-ventilation when the folding doors are closed. The wards being lofty, their inmates have the most abundant supply of gently moving air with the minimum of draught, so that dormitory and ward infections have less chance of developing. For the sake of comfort each ward is provided with an open fireplace with tiled surround. The psychological effect of such a fire, especially on a dreary day, is great. The main heating of the ward is, however, by panels beneath a terrazzo surround, a method which has not yet given rise to any difficulty in application. There is no need for a child in an open-air hospital to suffer from cold, although access to cold air is desirable. By means of the panel heating dampness may be excluded, a matter of great importance to children with joint disease, many of whom are immobilised in bed for lengthy periods.

The walls to a height of 4 feet are covered with terrazzo, while the centre of the floor is composed of teak blocks. The whole side of the ward being open, the beds are pushed on to the balcony with the minimum of labour. At the junction of the ward floor with the terrace outside is a guttered grating to catch any rain which may be blown in, but there is no obstruction to the wheeling of beds—ward floor, terrace, and grating being on the same level. The wards are illuminated by concealed roof lights which may be increased or diminished at will, and are so placed as to cause no glare in the patients' eyes. Differentially heated electric mattresses were at one time provided for the patients but these have been given up. Instead, in cold weather, each patient has hot-water bottles, changed four-hourly, when they are placed in a steam-heated chamber to be warmed up. This procedure is not only labour-saving but prevents waste of hot water. The beds and spinal stands are provided with large wheels and are easily moved.

The terrace in front of the wards is 25 feet in width, and is provided with a vita-glass covered balcony for a width of 10 feet. The proximal half of

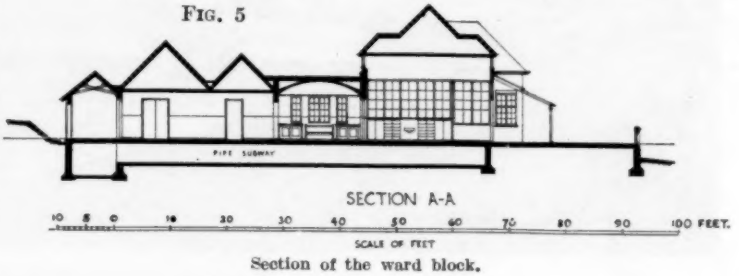
FIG. 3



Lay-out plan of the same. The dotted lines indicate the position of the wards in the original hospital.

the roof of this balcony is fixed to the wall, the distal half being a sliding roof of vita-glass, counter-balanced and so constructed, that by means of simple gearing it may be raised or lowered in sections at will. In fine weather this sliding roof is raised, in wet weather it is lowered; all patients therefore may be in the open air without danger of being disturbed by rain or snow. This terrace, approximately 1000 feet long, is paved with artificial stone blocks tinted green to avoid glare. It is readily accessible for every bed in the wards, and facing south-east, ensures the maximum of sunlight for the patients, combined with the maximum of protection. From the centre of the terrace are steps to the ground and a ramp on each side for the use of ambulant children who are crippled or need crutches.

FIG. 5



Section of the ward block.

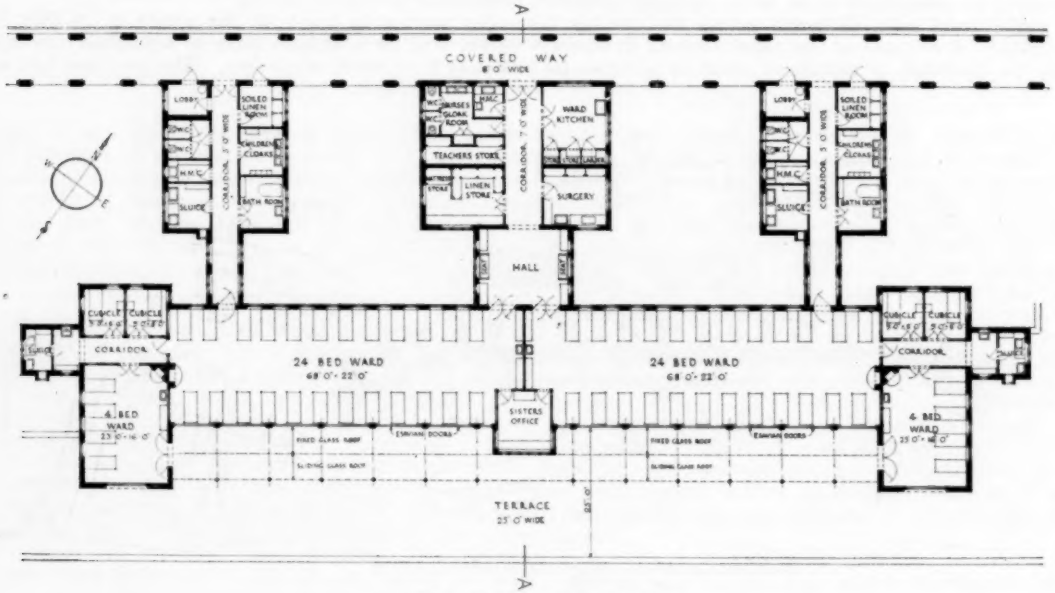
SANITARY ANNEXE

Each ward has its own sanitary annexe, comprising a sluice house, with hot-water rack for keeping bed-pans warm, and an appliance for sterilising them after use. There are separate lavatories, a room for ambulant children to wash in, a room for recumbent children to be washed in, with a special bath and special bath bed. At the north end of each annexe is a room for brushes, brooms, coal, &c., which may be brought from the cloisters behind the hospital without entering the ward at all. On the other side of the corridor is a room for soiled linen, which is collected in bins and removed via the cloisters. In the centre of each ward unit is a passage way from the cloisters leading to the main wards, with ward kitchen, surgery, housemaid's pantry, nurses' cloakroom, room for teacher's stock, and extra mattress, blanket, and linen rooms specially heated. The sister thus has her complete stock conveniently under control. The ward kitchen has, in addition to a hot plate, a small gas-stove and a steamer for sterilising crockery and cutlery after they have been washed. No child ever has any food presented to him on any utensil which has not been sterilised, and the danger of cross-infection is thus minimised. In the surgery there is a steamer for sterilising dressing bowls, &c., used in the wards. Dressings, gowns, and towels are sterilised in the central department. Attached to each patient's bed is a metal locker containing his own toilet requisites, so that danger of intermixing is excluded. Should any infectious disease arise, the patient is transferred at once to the isolation block which, in addition to small wards, has five separate cubicles approached by a passage way behind, but completely separate one from the other. Here observation is made easy by glass walls. The windows open completely and the south half of the roof is comprised of wired vita-glass on the sliding roof principle, so that even though suffering from infectious disease, the patient may enjoy the benefits of sunlight and fresh air without being moved from the cubicle. In inclement weather the windows are closed and the sliding roofs lowered, ventilation being ensured by flap ventilators.

OTHER DEPARTMENTS

Connecting the ward units behind is a long covered passage through which patients may be wheeled or carried under shelter to any department of the

FIG. 4



Ward block for 60 beds: plan.

hospital—actually they will be conveyed by electric trolley. A subway beneath these cloisters carries the heating, electricity, and gas for the ward units. The water for domestic purposes is softened, but hard drinking water is also laid on. In the centre of the hospital on the north side, and in ready access to the cloisters, there will be erected a treatment block, containing a fully equipped operating theatre with anæsthetic, sterilising, and surgeon's rooms, X ray department with fireproof room for storage of films, a studio for photographic work, plaster room with plaster store, massage and remedial exercise room, dressing rooms, dispensary, &c. On the floor above it is proposed to erect a surgical ward where patients may remain before and for a few days after operation. There will also be a special ward for sick staff, a lecture theatre, and a fully equipped laboratory. Owing to the nature of the ground there is a difference of 12 feet in level between east and west ends of the hospital. The extreme east block is therefore constructed in two storeys, the upper being a ward unit as described, and below it a dining-room with servery for ambulant patients, class-rooms, open-air and sheltered play-room, and hobby-room. These rooms will be separated by folding walls, and are so designed that in emergency they may be converted immediately into one large ward or one or more smaller wards, to provide temporary accommodation if at any time one of the regular ward units should need redecorating or repair. Should infectious disease occur in any of the regular wards, this section could be utilised while the unit is being disinfected. In fine weather the ambulant children will be taught on a specially designed terrace outside the class-rooms. Adjacent is a head teacher's room, teacher's common-room, and necessary annexes. Behind, on the same floor, is an exhibition room and the new light department with sister's office, and outside will be an outdoor light department designed for use in all weathers, and so constructed that the patients may have the freest access to cold air during treatment. Near-by are the orthopædic workshop and surgical carpenter's shop and stores. This lower floor may be conveniently reached from the wards and terrace above, either by one of the two ramps, suitable for trolleys or ambulant cripples, or even more readily by a staircase.

A Principle that Might be Extended

It may be reasonably argued that there is a wider issue than the application of these principles to open-air country hospitals for children. Has not the time come when, with an accurate knowledge of the value of open air and sunlight, such principles might be usefully applied to other types of hospitals, to residential institutions of all kinds, including schools and even to private houses? There is no doubt that living under such conditions many hospital patients would be restored to health more speedily, that the pupils in schools would be sturdier, healthier, happier, and less prone to infectious disease than at present, and that the community as a whole would benefit. In any case, it is certain that adequate, readily accessible balcony accommodation, with sliding roofs where possible, should be regarded as essential necessities in all modern hospitals and nursing homes.

I desire to acknowledge my indebtedness to Mr. H. Smart, F.R.I.B.A., the architect of the Lord Mayor Treloar Cripples' Hospital, who has kindly supplied the illustrations to this paper, and whose helpful advice and criticisms I have much appreciated.

THE L.C.C. HOSPITAL SERVICE

THE material collected in that portion of the annual report of the London County Council for 1931, which deals with the hospitals and general medical services under the control of the central public health committee, includes also a discussion on hospital management, an account of the salaries and emoluments of the staff, and a description of the London ambulance service.[1]

PATHOLOGICAL SERVICES

In an introduction, Sir Frederick Menzies refers to the development of pathological services, since experience has confirmed the conclusion that the absence of any organised laboratory system in the poor-law hospitals was not only unsatisfactory but also uneconomical The importance of facilities for personal coöperation between clinicians and pathologists is recognised. To this end the establishment of five group laboratories, with a separate histological laboratory, was decided on. Three of these are already in working order and are supplemented by hospital laboratories for examination of pathological material on the spot in eight hospitals. These hospital laboratories are staffed by women hospital laboratory technicians, specially trained for the purpose at the southern group laboratories; Dr. G. W. Goodhart reports that excellent work is being done by these technicians and that there is reason to believe that they are earning the confidence of medical officers.

Eighteen of the 28 general hospitals under the central public health committee are now provided with some degree of pathological facilities. With the gradual development of this service the necessity for having recourse to the services of external laboratories has progressively diminished.

The marked diminution in the number of patients treated for diphtheria is noted—the number of admissions being 7190, compared with 11,505 in the previous year. The amount of diphtheria antitoxin issued (236 million units) is the smallest annual issue made during the last seven years. Among the special investigations recorded is one on percutaneous immunisation against diphtheria by means of an ointment; the results indicate that with the material at present available this method of immunisation is not likely to be successful.

SPECIAL UNITS

Each hospital, prior to its transfer to the Council, served a definite district of London, and patients and their friends are inclined to resent any departure from the long-established usage of the guardians. One of the reasons for the passing of the Local Government Act, 1929, however, was to pool the hospital resources for the benefit of the metropolis generally, and experiments in re-allocation are being conducted in 11 of the boroughs. Steps were taken towards the establishment of special units in certain hospitals, in order to economise in medical nursing staff with special experience, and in special equipment; moreover the convenience of specialists or consultants is promoted by such concentration, and research work can be more easily undertaken.

The special units are to be as follows:—

Plastic surgery.—A unit established by the late Wandsworth Board of Guardians at St. James

[1] L.C.C. Annual Report of the Council, 1931, vol. iv., Part 1. No. 2935. London: P. S. King and Son, Ltd., 1932, pp. 233, 2s. 6d.

Hospital, Balham, to which Sir Harold Gillies was attached as visiting surgeon, was transferred to Hammersmith Hospital in June, 1931, and has since been enlarged. Sir Harold is to serve as (honorary) chief surgeon, Mr. T. Pomfret Kilner, as surgeon, with assistant surgeons, anæsthetists, dentists, and a dental mechanic, a speech trainer, and a photographer-stenographer.

Radium therapy is concentrated at Lambeth Hospital under Dr. G. F. Stebbing; the work increased considerably during the year under review and will be described in another volume of the report.

Rheumatism.—In response to a request from the British Red Cross Society, it was decided to set aside a number of beds, not exceeding ten, for selected cases of subacute and chronic rheumatism under certain specified conditions. The patients thus admitted are subject to assessment of maintenance charges and are under the care of the medical superintendent of the hospital, though the staff of the Red Cross clinic are afforded facilities for research into and investigation of their conditions. The arrangement whereby 12 beds for children suffering from acute rheumatism were reserved at the St. Mary Abbot's Hospital has been terminated.

Thoracic surgery.—It was agreed that the intervention of a chest surgeon may be required for conditions which arise as part, or as complications, of subacute and chronic disease. It was, however, impossible to forecast the amount of surgery required and it was decided, as an initial step, to ensure that the services of a thoracic surgeon (unnamed) would be available for the general hospitals, but pending a year's experience no one hospital is being set apart for this work.

Thyroid diseases.—At the request of the Medical Research Council, who had found the lack of sufficient hospital beds to be seriously hampering research into the causes, manifestations, and treatment of Graves's disease, it was decided to provide a special unit of 10–12 beds at the New End Hospital. Dr. G. Scott Williamson and Dr. Innes H. Pearce are to be specially associated with the unit, to which patients suffering from myxœdema and from parenchymatous goitre and cysts may also be admitted.

Lupus, as a manifestation of tuberculosis, is in general dealt with under the Council's tuberculosis scheme. Adult patients requiring in-patient treatment as well as the application of Finsen light are accommodated at the Bow institution and go to the London Hospital for light treatment.

MENTAL PATIENTS

The gradual reorganisation of the mental units associated with the transferred hospitals has been decided on, since the arrangements for classification and segregation were found to be defective in the main; many of the units were somewhat gloomy and ill-equipped; and only two had mental consultants attached. Large observation blocks have been established at Bow to serve the eastern districts and at Constance-road institution to serve the southern districts. By permission of the Mental Hospitals' Committee, nine medical superintendents or deputy medical superintendents, have been appointed to act as consultants to existing units, which they visit once every week. Psychiatric social workers are attached respectively to St. John's and St. Peter's Hospitals, and their work is being much praised. Out-patient clinics, staffed from the Maudsley Hospital, are established in four hospitals in the north, east, and west of London, while patients from south London are seen in the out-patient department of the Maudsley Hospital. These clinics are used as consulting centres by general hospitals not visited by mental consultants, and also for cases of neurosis, psychoneurosis, and early mental disease in which district medical officers or public assistance committees desire an opinion.

VENEREAL DISEASE

Patients will in future be concentrated in nine units, four for men and five for women, in which some 270 beds will be available; all these units are now fully equipped for diagnosis and treatment. The important task of coördinating the venereal disease work in the municipal hospitals with that carried out at the voluntary hospital clinics will be greatly facilitated by the appointment of Mr. Anwyl Davies as general consultant in venereal disease to the Council's hospitals. It will now be possible for the first time to ensure a uniform standard of treatment and of record-keeping.

PATIENTS' DIETARIES

Nine scales of dietary have been prepared to meet the needs of various categories of patients. Prof. S. J. Cowell and Dr. Donald Paterson have given advice on the nutritional value of the diets prescribed, which are here tabulated. The dietaries are supplemented by fresh fruit, and medical officers have full power to add extra foodstuffs or vary them according to individual requirements.

TRAINEE SCHEME

In the part of the report devoted to special hospitals, one of the most interesting sections is that describing the initiation of training centres for tuberculosis nurses and domestic servants among ex-patients at King George V. Sanatorium and at Pinewood Sanatorium. These institutions were chosen because there is little stair climbing or heavy nursing work to be done, and no children—who might be susceptible to infection—are admitted. Candidates for training must be in a quiescent stage of the disease and serve for a preliminary period of six months or more at half-pay rates, being subsequently appointed on probation to the permanent staff. For purposes of establishment three trainees are regarded as the equivalent of two healthy members of the staff. Since the inauguration of the scheme 29 women have been accepted as trainees, breakdown demanding renewed sanatorium treatment occurring only in four cases. The sickness-rate among the rest is little, if any, greater than that among the healthy staff.

AMBULANCE SERVICE

At the end of 1931 186 ambulances and omnibuses were in service, the staff (excluding ambulance nurses and mechanical staff) numbering 404. The total number of calls in 1931 was 43,746, of which 11,226 were dealt with by the two double stations at Bloomsbury and at the Elephant and Castle. The average time to reach cases in the year was 6·5 minutes, the quickest average time since the inauguration of the service, while the average time elapsing between the receipt of calls and arrival at hospitals was only 13·6 minutes. Such swift transport certainly justifies the provision at hospitals of sufficient casualty officers to ensure that emergency cases receive expert attention without a moment's delay.

HEALTH AND DISEASE IN THE ARMY

THE "epidemic constitution" of 1931 is thought to have favoured influenza and cerebro-spinal fever, and the director-general's annual report[1] shows that there were 88 cases of the latter infection, 39 of them (with 10 deaths) at Aldershot. There was no evidence of case-to-case spread. It is suggested that the disease is essentially a nasopharyngitis, invasion of the blood and meninges occurring as a complication. In one case of meningococcal septicæmia without localising symptoms the fever lasted four months, during which the organism was easily recovered from the blood.

Diphtheria cases were reduced by a third during the year; immunisation is now given without Schick-testing. Enteric fever is less common, and there were only three cases in China. In India 80 per cent. of the cases of enteric are now diagnosed by blood culture; of a total of 183, all but 30 were sporadic and unrelated to other military cases. It is claimed that about 98 per cent. of the troops are protected. One patient at Aldershot had not been inoculated. Malaria was slightly reduced and the number of deaths was halved. Plasmoquine reduces the time under treatment, and Atebrin is said to cure both forms of tertian infection. Quinine prophylaxis was tried in China but was not approved, and mosquito repellents were used by troops in special employment at Hong-Kong in August and September, when one case only developed among 1000 men. Little is said of mosquito-proofing of barracks, probably because it is now accepted. The villages near barracks are being swept into the ambit of antimalarial measures, and a weekly day of empty tanks, in which to destroy larvæ, is specially advocated. Pneumonia is the disease causing most deaths; its small increase is attributed to the prevalence of influenza. Pulmonary tubercle has slightly increased, also amongst soldiers' wives. The liability increases after ten years' service and over the age of 30. The heaviest incidence is generally on the Eastern District (which includes London), and is always less in India than at home, perhaps because of the greater age of men on home service. Conditions of housing and food have been steadily improving in India since the war, but the case-incidence remains much the same, though it has lessened in the last two years. Cases of "pyrexia of uncertain origin" are increased, and it is suggested that unwillingness to accept this diagnosis is "tantamount to assuming that every species of tropical fever has been already sorted out from its fellows and duly labelled." Venereal diseases caused fewer admissions and less loss of service this year. The striking reductions since 1913 at the large stations is well brought out.

The equipment of operating theatres is being steadily improved, making surgical operations easier and safer, and this applies to families' hospitals in which (at home and abroad, but not in India) 1849 confinements took place with only two deaths. X ray equipment is also much better, while massage and electrotherapeutic sections are said to have secured a marked saving of days in hospital.

A committee has decided that a separate suitable uniform must be provided for war and manœuvres "as for other active games," and that the soldier's load should not exceed a third of his weight, otherwise, in action, he throws away some of his important equipment or reaches his objective unfit to fight. It is mentioned that four-footed beasts of burden are better shaped for weight-carrying than is the soldier, yet that they carry proportionately less; the elephant, weighing 3½ tons, carries a seventh of his weight; the camel, weighing half a ton, and the mule weighing 700 lb., carry only a quarter of their weight.

The object of physical training is said to be mental and physical alertness and agility with symmetrical development, and it is noteworthy that whereas in 1930 there were 61 invalids with disordered action of the heart, there were only 19 in 1931. "The fitter the man the slower the pulse" is found on examination to have support, and it is noted that among long-distance runners there are more non-smokers in the first than in the last ten after three miles across country.

Dental repair conserved 3·25 teeth per man this year (3·16 in 1930), and it is rare now for a man to refuse treatment; if he does, he is apt to return and take it later. Recruits are now examined more minutely with better light, so invaliding for ear disease has fallen from 214 to 153, though it is still the chief cause for rejection at entry.

[1] The Health of the Army in 1931. Report by Lieut-General Sir Harold Fawcus, director-general, Army Medical Services. London: H.M. Stationery Office. 1933. Pp. 158. 2s. 6d.

PARIS

(FROM OUR OWN CORRESPONDENT)

AN ACTION FOR DAMAGES

IT is amazing to what lengths some litigants will go when there is a prospect, however small, of extracting much hard cash out of a surgeon. On March 27th, 1929, according to the *Siècle Médical*, Dr. A. operated on Madame L. Two days earlier she had consulted him, on the advice of her medical attendant, for a small swelling in the right breast. The surgeon having diagnosed, it was alleged by the plaintiff, a benign tumour, recommended its removal by a small operation of no importance. He took the precaution of requesting the husband to be present in the hospital at the time of the operation. During it he came to the conclusion that the tumour was malignant. He then consulted the husband, who charged him to do what he thought was best. Accordingly, he amputated the breast without the patient's consent, and while she was still under the influence of the original anæsthetic. Fourteen months later the patient underwent a second operation, presumably for an extension of the disease, and death supervened in due course. The widower not only refused to pay the surgeon's fee of Fr.1860, 600 of which represented hospital charges and visits by the surgeon at the patient's home, but sued him for Fr.200,000 in damages. The plaintiff supported his claims by arguing that the defendant had not taken all the necessary measures to ascertain the true nature of the tumour before the operation. He should have warned the patient of the possibility of an extensive operation, and have made a histological examination of the tumour. It was pointed out for the defence that the differential diagnosis of benign and malignant tumours is the more difficult because a benign tumour may become malignant. Further, it was argued that the diagnosis in such a case cannot be definitely made without an exploratory incision. By his prompt action, the surgeon had not only reduced the chances of a recurrence of the disease, but had also saved the patient from the terrors of a second operation

following on the heels of the first. In the opinion of the medical experts, whose evidence was taken in this case, the patient would have been exposed to a very real danger had the surgeon suspended the operation and let her entirely regain consciousness in order to solicit her opinion as to any further action. The plaintiff was condemned not only to pay the surgeon his bill of Fr.1860, but also Fr.10,000 in compensation for the losses incurred over this action. The surgeon was also authorised to publish extracts of this judgment in one Paris and one provincial journal.

SITES OF CANCER

Prof. Léon Imbert, who is attached to the anti-cancer centre of Marseilles, has published in the *Presse Médicale* for Dec. 28th certain rather striking statistics covering the years 1929–31 and the first six months of 1932. During this period 1091 patients suffering from cancer were examined. As many as 333 suffered from cancer of the uterus, and as there were only 694 women in this material, it will be seen that approximately 50 per cent. of all the cases of cancer in women were of the uterus. With another 26 per cent. for cancer of the breast, malignant disease of these two organs was responsible for three-quarters of all the cancers in women. Big sex differences were observed in the case of malignant disease of the larynx, mouth, and lips. Among 48 patients suffering from cancer of the larynx, there was only one woman, and among 98 patients suffering from cancer of the buccal cavity, including the tongue, there were only five. Prof. Imbert associates this relative susceptibility of the male to cancer in this region with his indulgence in tobacco.

BERLIN

(FROM OUR OWN CORRESPONDENT)

FEE-SPLITTING

THE question of fee-splitting is discussed in an editorial article of the *Ärztliches Vereinsblatt*, the official organ of the Deutsche Aerztevereins-Bund. The editor states that the system, called in France dichotomy, is quite usual in certain countries; in others it occurs but is not generally accepted, whilst in some it is unknown and is regarded as unprofessional—for instance, in England and America. In Germany fee-splitting is still in its infancy, but the editor draws attention to the fact that some time ago certain advertisements appeared in medical journals in which partnerships or (as it was called) coöperation was offered between general practitioners and specialists, especially surgeons. These advertisements have almost entirely disappeared from the journals since their character has been recognised, but nevertheless offers of fee-splitting continue in other forms. The nuisance began during the late war, when many medical men were in the army, and locum tenents, sometimes of a lower professional standard, were appointed who required fee-splitting from the consultants in a manner then unknown in the profession. Since then the difficult financial position of many practitioners—and specialists likewise—has led to a slackening of professional standards; it is of course obvious that the difference between the somewhat small fee of the family attendant and the sum charged by the surgeon who is consulted is sometimes striking, and the editor is of the opinion that an adjustment should be made in favour of the former; but this should be done openly. If dichotomy were to become more common in Germany than it fortunately is now, people may begin to think that their medical attendants propose operations for the purpose of sharing the fee and not in the interest of the patient's health, and that only those consultants who are prepared to split fees are recommended.

BEE-STINGS AND RHEUMATISM

In popular medicine bee-stings have long been considered as a remedy for rheumatism, and as early as 1888 a Viennese practitioner, Dr. Terk, had his rheumatic patients regularly stung by bees. Dr. Wolff and Dr. Pollack have recently succeeded in isolating the toxin from the bees. It is very like saponin dissolved in formic acid, and they call it apicosan. It is free from albuminous substances, so that no danger of anaphylaxis can occur. By intracutaneous injections—subcutaneous injections being less efficacious—a wheal with a reddened halo like a bee-sting appears. First, 0·2 c.cm. is injected, and the amount is gradually increased to 1·0 by the 13th day. There are three strengths of apicosan on sale, of 1, 3, and 9 units, a unit being equal to the toxin discharged by one bee-sting. As part of the local reaction, general symptoms with increased pains and swelling of the joints sometimes appear. The cure is effective for about five weeks. No undesirable effects have hitherto been observed. The remedy has been applied in chronic and deforming arthritis, and in Bechterew's disease. The pains became less and the mobility increased in cases where other remedies had proved unsuccessful.

IDIOSYNCRASY TO COLD

Dr. Bernstein, of the dermatological clinic of the Düsseldorf Medical Academy, discusses the shock which is experienced by persons with an excessive sensitiveness to cold. The idiosyncrasy may appear in the form of urticaria, hæmoglobinuria, or asthma. Sometimes general anaphylactic symptoms, such as decrease of blood pressure and leucopenia develop. In very sensitive persons fainting fits with unconsciousness occur. Sometimes slight cold is sufficient to produce such symptoms. The sudden death of good swimmers shortly after they have entered cold water is due to an idiosyncrasy of this nature. As a test a piece of ice should be placed on the skin, when a local wheal is soon produced in a sensitive person.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. P. B. Egan is placed on retd. list with rank of Surg. Capt.

The following appointments are notified: Surg. Lt.-Comdr. R. W. Mussen to *President*.

Surg. Lt. E. J. Mockler to *Queen Elizabeth* (transfer of flag).

ROYAL ARMY MEDICAL CORPS

The undermentioned Lts. to be Capts.: R. L. Whittaker, J. G. Black, D. A. O. Wilson, T. R. J. P. Kerwick, A. N. B. Odbert, C. A. Levy (prov.), and S. W. K. Arundell.

ARMY DENTAL CORPS

G. M. Sinclair to be Lt. (on prob.).

TERRITORIAL ARMY

Lt.-Col. S. F. Linton, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.

Capt. D. O. Macdonald, from T.A. Res. of Off., to be Capt.

Lts. N. Harkness, F. H. Hollingshead, and R. E. Rees to be Capts.

INDIAN MEDICAL SERVICE

The undermentioned appts. are made: To be Capts. (on prob.): W. J. Moody and A. E. Kingston.

To be Lts. (on prob.): J. D. Murdoch, G. B. Thomas, A. T. Andreasen, J. M. Sclater, D. R. Tweedie, C. F. Garfit, J. W. Richmond, G. S. N. Hughes, and A. D. Barber.

Lt.-Col. J. F. Boyd retires.

THE DOCTOR'S DAY

"Come, tell me how you live," I cried,
"And what it is you do!"

XIV.—THE SHIP SURGEON

No doubt those of you who have travelled as passengers in a big liner at sea have observed in the dining room the ship's surgeon, resplendent in blue uniform, gilt buttons, and red and gold stripes on his sleeves or shoulders, presiding at one of the tables and apparently being vastly amusing to or being amused by the bevy of fair ladies on either side of him. Perhaps you may have noticed him, too, standing at the head of the gangway as the ship is anchoring in some port, awaiting the arrival alongside the ship of the port quarantine officials. Perhaps also you may have seen him going round the ship at 10.30 in the morning, poking his head into various dark holes and corners, or seen him at 10.30 at night sitting in one of those same corners in confidential chat with a passenger. All these sights may have made you think what a pleasant life it must be to be a ship's doctor; how jolly and interesting it must be to meet fresh people every week or two and to see most of the world at no expense; what a care-free existence he appears to have and how easily he earns his pay. Probably, being on a holiday and not wanting to hear anything of medical matters for the time being, you have not troubled to make his acquaintance. So you have left the ship at the end of the voyage with, perhaps, a feeling of envy for one who appears to have a very easy professional life. The ship surgeon has his working hours, however, just the same as any medical man ashore has. How does the surgeon of a big passenger liner spend his days?

THE MORNING

My work of yesterday may be taken as a fair sample. My cabin steward called me at 7.20. Then came a good soak in a hot salt water bath, followed by breakfast at 8 o'clock and a walk on the boat deck for 40 minutes or so. At 9 I went down to the ship's dispensary.

The dispensary is a good-sized room; its walls are lined with racks, drawers, and cupboards in which are stowed our very comprehensive stock of drugs, dressings, and instruments, and it contains also an operating table, a dental chair, steam and electric sterilisers, and a writing desk. Here I met the dispenser and the hospital nurse, and here I was kept busy till about 9.40 seeing various members of the crew on the attending list—three pantrymen with cut fingers, two engine-room hands with small scalds, a couple of stewards with sore-throats and a cough, a bell-boy who wants a tooth out, and a quartermaster who wants his pension papers signed. One of the stewards who has a temperature is put into the hospital. Then the third-class passengers come in with various small complaints—a mother whose baby is vomiting its milk, two girls who require a laxative, a woman who, following the excitement and fatigue of packing and joining the ship, has missed her period and is rather anxious about it, and a man who wants me to visit his wife who is laid up in their cabin. It is all rather like the out-patient department of any hospital ashore.

Then comes the "round of the wards." In the ship I am in there are four hospital cabins, all pleasant rooms, two of them being fitted with real beds for passengers and the other two with iron bunks for members of the crew; 15 beds in all. The dispensary and adjoining hospital cabins are situated along one side of the ship a little aft of amidships, for most ship designers have learnt (at long last) not to put the sick quarters at the very after end of the ship right over the propellers. I have an isolation hospital as well, on a raised deck all by itself. This has 5 cabins and 22 beds. So my total hospital accommodation amounts to 9 cabins and 37 beds—more than many a good-sized town hospital has. Sometimes they are all wanted, as when one gets an influenza epidemic abroad, but yesterday I had only 7 beds occupied.

The cases in the hospital were nothing very exciting clinically. In one ward I had a cabin steward with "housemaid's knee" from over-much kneeling at scrubbing and not using the padded mats supplied for the purpose; a deck sailor with a sore-throat and a temperature, and a waiter who had upset a pot of tea over his foot and got scalded. In the female passenger ward was an oldish woman with chronic rheumatism. With a slightly rolling ship the struggle up and down the somewhat steep stairs between her cabin and the dining room is rather risky for her. So I have put her into the hospital mostly for her convenience and safety. In the isolation hospital are a measles child and her mother, and also a mental patient being returned to his own country.

With these cases I am kept busy till 10.20. Ten minutes later, with the purser, the chief and second stewards, an engineer officer, an electrician, and the ship's bugler, I attend the captain on his usual daily majestic tour of inspection of the ship. This procession wastes half an hour of my time. At 11 A.M. the nurse joins me and we visit the sick woman in the third-class. It is a case of sea-sickness, for which I prescribe atropine and hyoscyamine. Then we go and see two ladies laid up in their cabins in the first-class. One is liverish, while the other has that tiresome complaint to treat, insomnia. Then comes an emergency call to the dispensary where the nurse and I find a third-class passenger boy who has fallen and cut his head rather badly. This requires five stitches, and also entails the filling in, on my part, of a somewhat lengthy document called an "injury form." This document ultimately reaches the shipping company's lawyers, providing them with the main facts of the case should there be a claim for compensation.

Between 11.30 and 12.15 is my time for seeing first- and second-class passengers in my consulting-room. This is a roomy and nicely furnished apartment adjoining and communicating with my own private cabin. On an average two or three patients turn up there, but yesterday there were five. One lady came to see if I could supply her with two strips of calico for lengthening the sleeves of her husband's dress shirt! Calico supplied. At 12.30 the nurse arrives to say that she believes there is another case of measles in the third-class. A visit there confirms her diagnosis, and the case is ordered to the isolation hospital. A few minutes after 1 o'clock I go down to my table in the dining-room. There I have as table mates a professor of music, an archæologist, a manufacturer of wallpaper, a well-known author, a house-heating engineer, and an American school teacher on a year's leave from her school and on her first trip abroad. She is insatiable in her thirst for information.

Between the lot of them what questions I have to answer! "Do seals travel alone?" "What is the average weight of a seagull?" The wallpaper manufacturer, remembering his very first sea voyage, inquires "What was the name of the chief engineer of the *Persia* in 1908?" The teacher, anxious about getting a draft cashed, asks "How many years has the First National Bank of Boston had a branch office in London?" and also "What is the weather in England going to be like when we get there?" Although to answer all the questions that are put to me would tax the knowledge of the combined contributors to the "Encyclopædia Britannica," it is all good fun and we are all "as thick as thieves."

THE AFTERNOON

At 2.30 I attend at the dispensary again to vaccinate some members of the crew—a matter I had postponed during the hot weather and more busy portion of

the voyage. From 3 to 4 o'clock I found myself unoccupied clinically. I fill in that time bringing up to date my medical journal, a somewhat ponderous volume, containing names and brief details of all cases treated on the voyage and destined ultimately for my medical superintendent's information. Also during that time I receive a visit from the secretary of the passengers' entertainment committee asking if I can supply him with a selection of odorous drugs for a smelling competition. From 4 to 4.30 is my afternoon passenger consulting time. Yesterday this was enlivened by a visit from a little old lady who pathetically asked me to aid her in searching the ship for her lost lover! They had quarrelled some 40 years ago, and she has been searching the world for him ever since. Harmless and apparently sane except on this one point. At 4.30 I attend again at the dispensary to see any members of the crew. Here one old "salt" comes along to say that he is beginning to feel the colder weather and fears a return of his old malaria. His doctor at home has advised him to take a couple of bottles of beer a day for this, and could I order . . . ? However, nothing doing. At 4.45 the third-class passengers attend again, one this time with alleged "potoman" poisoning, and after that I make the afternoon round of the wards. Perhaps after that the nurse and I visit a passenger cabin or two, but generally from 5.30 to 6.30 I am free.

Then a quarter of an hour is occupied scrambling into my mess uniform—an Eton jacket affair—before welcoming to my private cabin sundry passenger acquaintances and entertaining them for half an hour or so, for the good of the Company, with a seductive cocktail or a little dark sherry. Then comes the function of the day—dinner—where our efforts to amuse and interest one another are exasperatingly spoilt by a blaring orchestra playing jazz. After dinner I have another short session in my passenger consulting-room, and at 9 the nurse and I pay our final visit to any sick people who may require to be seen in their cabins or in the hospital.

THE END OF THE DAY

Such is the daily routine, a day pretty well occupied in any case, and always liable to be made extra busy by such emergencies as a passenger "running amok" with delirium tremens and requiring restraint and a guard; the appearance of a small-pox case and the vaccination of all contacts; or an acute appendicitis which is a more anxious and troublesome affair afloat than ashore.

Anything can, and occasionally does, happen aboard ship—murder, attempted or actual suicide, childbirth, concealment of birth, any form of insanity, diabetic coma, uræmia, retention of urine, sleepy sickness, typhus, and, in the tropics, plague, dysentery, malaria, and all the rest of the tropical medley—and the ship surgeon must be prepared to deal, with a reasonable amount of competence, with any of them.

Finally, last night, at about 9.40, the wireless operator handed me a message from the captain of a passing cargo boat asking me for advice how to deal with an awkward emergency. I handed in my somewhat lengthy reply at about 10.30 and "called it a day." At 10.50 P.M., when tidying up my consulting-room desk prior to climbing into my narrow bunk, I came across a memorandum from the Company's head office: "The management expects the surgeon to assist the purser's staff in arranging for and in supervising the amusement of the passengers." At all events, I did supply the smells for the smelling competition to-day!

PANEL AND CONTRACT PRACTICE

Investigation by Reference

A CASE recently referred by the clerk of the London insurance committee to the medical benefit subcommittee, and dealt with under Clause 7 (3), is of general interest. In September, 1932, an insured person obtained treatment from the practitioner as a private patient, the fees paid amounting to £1 3*s*. 6*d*. A claim for a refund was put in, and the doctor was asked for his observations under Clause 7 (3). The practitioner, after being furnished at his request with a copy of the clause, described it as autocratic, and concluded his letter to the committee with the following sentence: "The remuneration received for the treatment of panel patients does not encourage me to give any more than very ordinary treatment." For writing this to the clerk of the committee—not for publishing it in a newspaper or stating it to his patients—this medical benefit subcommittee decided that his conduct to insured persons required investigation. They have no power to carry out such an investigation themselves, but can refer a matter for investigation to the medical service subcommittee. The effect of this procedure on the practitioner concerned is serious, for it implies publicity as well as worry, the medical service subcommittee having to report the case to the full committee. This factor is never considered by the lay members of these committees who pass these resolutions for "investigation by reference," as it is called. The trouble is that any person can write any sort of lie about a doctor to the clerk of the committee; he need not be a relative of the patient, he need not have been a witness of the action complained of, the patient need not even have sanctioned his interference. But once the accusation is brought to the notice of one of these committees—mostly composed of laymen—they order an investigation by reference, and then, no matter what the doctor has to say, the medical service subcommittee nearly always insists on a hearing to complete the investigation.

The regulation which sanctions this procedure requires amending. At present a practitioner is entitled to charge an insured person if he fails on demand to produce his medical card whilst stating he is an insured person; but the practitioner must give an official receipt on Form R 52, which enables the insured person to be repaid if he is really entitled to medical benefit. The insurance committee then repay the insured person out of the money that they would normally pay that doctor, but the patient becomes one of that doctor's panel patients. Frequently, however, insured persons, intentionally or otherwise, omit to say they are insured at all, and they then receive an account in the ordinary way—a private bill—from the doctor. If, within one month from the payment of fees or the receipt of bill, they write to the committee to say they are insured persons, the committee may (not must) order the doctor to refund the money. But the doctor is credited with the number of units which would be allowed to him had the patient been treated as a temporary resident—i.e., usually 6 units for the quarter instead of 1, which works out to a payment of something like 12*s*. or 13*s*. per case. The practitioner is asked for his observations before Clause 7 (3) is put into operation, and it was in his reply that the doctor in the case reported above made the remarks quoted. It would seem that reference by investigation should not be rashly ordered, and that more discretion should be given to the medical service subcommittee which receives these references to decide them without a

hearing, if they so choose. Moreover, they should have discretion when the reporting of such a case to the full committee is concerned. A doctor who wins his case against charges brought against him should surely have some monetary compensation for worry and loss of time, apart from the subsistence allowance which is the only thing he can now claim.

It seems preposterous that a practitioner should be put to the trouble involved in defending his reputation before a medical service subcommittee because he criticises to the clerk of the committee the working of a clause of the regulations with which he was unfamiliar. There was no evidence that this doctor had ever treated a panel patient differently from a private patient.

Fees for Anæsthetics

The panel conference held last October decided that it was proper for any panel committee to determine whether a practitioner in its area administering anæsthetics for a colleague should be specially remunerated or not. The regulations at present require a fee to be paid out of the practitioners' fund for such special service, provided the panel committee is satisfied that the claim is reasonable. In some areas practitioners have agreed never to put in such claims; in some the panel committee discourages them. In other areas there has been an increase in their number, in London to such an extent that the panel committee induced the insurance committee to agree to pay only a nominal fee of a shilling each—just to comply with regulations until the matter could be taken up with the Ministry. This shilling fee has never been agreed to by the Ministry and has therefore never been in force. The Insurance Acts Committee recently sent a deputation to the Ministry, when it was understood that the resolutions of the conference were not being received there with favour. It was felt that the public might think something was being taken from them that they now had, and it would be a difficult position for the Minister to explain in Parliament. London was specially asked to reconsider its resolution, and the matter will come again before the panel service subcommittee.

Continuity of Medical Benefit

The Insurance Acts Committee also gave consideration to the future of insured persons who go out of benefit as a result of being unemployed. There may be hundreds of thousands who thus come officially under the care of the public assistance medical service, but who through habit, or lack of knowledge that they are no longer eligible for insurance medical benefit, will still consult their usual medical adviser. Insurance doctors would then have many patients to attend for whom they were receiving no capitation fee, and they would be placed in a difficult position if they refused treatment on that account. If the Ministry of Health were to make the public assistance medical service open to all practitioners such unemployed patients could still have the doctor of their choice, who would then be paid by the public assistance committee and not out of health insurance funds.

Medical Certification Statistics in Scotland

The Department of Health for Scotland have devised a telling method of bringing out discrepancies in medical certification. Statistical tables of certification have been prepared for the two years 1930–31 and 1931–32, which include: a classified list of counties and burghs, giving for each insurance area the total numbers insured, the total number of first certificates issued, the incapacities begun and ended during the year, the total duration of incapacities, the average duration in days, the days of illness per 1000 on the lists, and the first certificates issued per 1000 on the lists. This elaborate set of facts is set forth in groups for industrial counties; other counties, including the Highlands and Islands; and the burghs. A further table shows the total number of insured persons referred to the regional medical officer; the percentage of these who were declared not incapable; and how many did not appear at the examination arranged for. In a covering circular Miss Muriel Ritson, comptroller of insurance, says that in nearly every area certain practitioners have issued certificates to a considerably larger proportion of their patients, and/or have continued to certify incapacity over longer periods, than have their colleagues. In many of these cases, she adds, the certification of the practitioner concerned presented the same features in both years under review. Moreover, a considerable number of cases referred to the regional medical officers come from the same practices, and in a high proportion of the references the practitioner's certification is not confirmed.

For Scotland as a whole the number certified by the regional medical officers as not incapable of work was more than 40 per cent. of the persons referred. The average duration of the certified illnesses in 1931–32 was 25·83 days, a slight reduction on 1930–31. This does not include chronic illnesses whose duration extends beyond the period under review. But this reduction masks the fact that the increase of certification and consequently in benefit expenditure began in Scotland early in 1932. There is a much heavier increase in the third quarter of 1932 compared with the same quarter in 1931.

The covering circular suggests that instead of full certification, more use should be made of the space provided on the certificate for "remarks"—e.g., on the probable duration of incapacity or the necessity for further examinations. The circular is directed to each practitioner, who can now learn the average certification in his area and discover whether he is above or below that average. At the same time, committees are requested to study the tables and to make a detailed investigation when the percentage of certification in any one practice seems unduly high.

Apart from the immediate administrative purpose, the tables now issued are a good index of the effectiveness of the panel system.

In the remote Highlands and Islands, for example, the average duration of illness is 31·9, and the first certificates per 1000 on the list are 121; in the Lowland counties the corresponding figures are 23·8 and 176; in the large cities they are 27·0 and 197; in the medium burghs 26·1 and 196; in the small burghs 27·0 and 188. The percentage of doctor's total list referred is: for the counties, 2·33; for the burghs, 2·98; for Scotland as a whole, 2·71. The numbers declared by the regional medical officers not incapable were for the counties 19·4 per cent., but 23·7 per cent. failed to appear. There is thus a total of 43·1 per cent. declared not incapable. The corresponding figures for the burghs are 20·3, 21·5, and 41·8. The fact that such a large percentage of referred persons should fail to appear at the clinic either because they had in the meanwhile been certified by the doctor or had themselves expected rejection and did not appear is disconcertingly large.

The circular directs special attention to the National Health Insurance Act, 1932, involving reduction in money benefits and cessation of medical benefit. It also contains details as to the rates of sickness among women. The rise in expenditure in Scotland in the year 1932, up to Sept. 30th, the latest returns available, has apparently no parallel in England and Wales. It is stated that the department have been unable to ascribe to any medical cause the rise in expenditure in Scotland which threatens to counteract the satisfactory results of the year 1931.

PUBLIC HEALTH SERVICES

Immunisation against Diphtheria

IN a book reviewed in these columns a few months ago Dr. J. Graham Forbes [1] gave a very full account of the epidemiology of diphtheria and made a survey, which was almost world-wide, of the progress of preventive inoculation up to the end of 1930. He has now [2] ascertained the further trend of diphtheria prevalence and prevention in many countries and has been able to include information as recent, in some instances, as last July.

From 1928 to 1930 diphtheria was pandemic in Europe. Its prevalence reached a peak in the latter year in most European countries, including the British Isles, and in 1931, except in parts of central and eastern Europe, the incidence and mortality fell markedly. In Australia, on the contrary, a phase of low incidence and mortality of some years' duration was ended in 1931–32 by increased prevalence. Neither the years of low incidence in Australia nor the sudden fall in prevalence in Europe can be credited to immunisation but to the ordinary periodicity of the disease. In Australia, until recently, very little immunisation has been done, though the confidence which was shaken by the Bundaberg disaster has now been largely restored. In Europe the decline has occurred in countries where prophylaxis has not been carried out upon any significant scale as well as in those, notably France, where the numbers immunised have been very large.

Over the greater part of the United States of America incidence and mortality have shown a continuous fall during the past five years. Forbes points out that in New York City and State particularly, diphtheria preventive work has been carried out upon an ever-increasing scale and under the most favourable conditions for the last 14 or 15 years, with the result, in his opinion, that prevalence has been definitely checked amongst a number of communities ranging in size from New York, with its 7 millions, downwards. Coincident with the increase of preventive inoculation during 1929–32 there has been a decline in prevalence "amounting to 25 per cent. in one year and 50 per cent. in the last two years. Compared with the 1911 record the fall is 84 per cent." The progressive increase of prophylaxis in Canada has produced comparable results in many of its important cities. In America and Canada these achievements have been made possible by organised and skilful propaganda.

THE PRE-SCHOOL CHILD

In France, although the educated classes have demanded immunisation, the opinion has been expressed by E. Lesné that unless compulsion is introduced, as it has already been for recruits proceeding to stations where the disease is prevalent, the necessary proportion of immunisations of the under-five group essential to affect prevalence will not be secured. In America and Canada this importance of immunising children of pre-school age has been fully recognised, and E. S. Godfrey, director of the New York State Health Service, has shown, for a number of cities, that even if 60 or 70 per cent. of the school population were protected there was no sensible decline in the attack rates until a "critical point or safety threshold" had been reached and maintained amongst the pre-school age-group. When the immunisation of "approximately one-third or more of those under 5 was superimposed on the numbers of school age already protected" a definite decline in the current prevalence of the disease became noticeable. It may be added that among children in this age-group reactions to the prophylactic antigen are minimal in incidence and severity.

Formol-toxoid, the anatoxin of Ramon, has either already superseded or is rapidly superseding the original toxin-antitoxin mixtures (T.A.T.). Toxoid is not only non-toxic but a more efficient immunising agent, especially if two or three weeks separate each of the three injections. Toxoid must be injected; inunctions of Loewenstein's toxoid ointment are definitely much inferior. Ramon is inclined to minimise the importance of reactions, but in this country at least reactions must so far as possible be avoided. Even among the pre-school group, protein-sensitive children, although uncommon, are to be found; in the higher age-groups they become increasingly numerous. Although a preliminary Schick test is always desirable it is not always feasible in clinic work, and even if it is done it is usually possible to take only one reading, a week later, by which time any pseudo-reactions, which indicate sensitiveness, have disappeared. Fortunately, sensitiveness to toxoid can be determined by the Maloney intradermal test,[3] the technique of which has lately been described again in Memo. 170/Med. of the Ministry of Health.

Using toxoid of the same potency as anatoxin, J. G. Fitzgerald and his associates [4] observed 16 per cent. of local reactions in 30,000 children and 10 per cent. of marked reactions between the ages of 5 and 14. In these cases they reduced the prophylactic doses of toxoid or omitted immunisation altogether. R. A. O'Brien and H. J. Parish,[5] using a potent unconcentrated toxoid, found that it was probably not more likely to cause reactions than a preparation like anatoxin which had a strength only one-half to one-third as great. Employing the Canadian toxoid test they were able rapidly to immunise a series of children without troublesome reactions, the non-reactors receiving this potent toxoid in full 1 c.cm. doses and the reactors toxoid-antitoxin floccules (T.A.F.), a preparation whose antigenic value is at least as high as that of anatoxin, but which rarely causes reactions even in adults.

Reactions, when they occur, although unpleasant, are harmless in the healthy. Ramon and Débre have stated (passim) that many thousands of injections of anatoxin have been made in tuberculous children at the Berck Hospital without untoward results. This is, of course, perfectly true, but, according to other observers, exceptions occur. In a recent paper E. Aubertin and P. Boudou [6] quote M. and G. Mozer as having observed activation of a focus in three children at Berck suffering from quiescent surgical tubercle, and Cruchet, Nové-Josserand, amongst others, as having reported similar activation in cases of pulmonary tuberculosis. The immunisation of tuberculous children, if these observations are well founded, is clearly not free from risk and should be avoided.

PROGRESS IN GREAT BRITAIN

In this country immunisation lags, except in a few bright spots like Edinburgh and Birmingham and

[1] THE LANCET, 1932, i., 517.
[2] Bull. of Hyg., 1932, vii., 669, 737.
[3] Amer. Jour. Pub. Health, 1927, xvii., 1027.
[4] Ibid., 1932, xxii., 25.
[5] THE LANCET, 1932, ii., 176.
[6] Paris Méd., Nov. 12th, 1932, p. 393.

its neighbouring towns, and some boroughs of Greater London—notably, Heston and Isleworth. The numbers so far immunised in several of our largest centres of population compare unfavourably with those which many an obscure town of central and eastern Europe can show, and can be expected to have no effect whatever upon prevalence. Forbes estimates that in Great Britain up to the end of 1930 a total of about 200,000 persons had been protected or were known to be Schick-negative, the proportion in Scotland being over three times greater than in England and Wales. In London, including Greater London, 43–44,000 were then known to be protected. In New York City the health commissioner, Dr. Shirley W. Wynne, recently reported that 166,000 children were immunised in 1932 alone. He is still concerned about the large number of young children who remain at risk, and appeals for a further extension of the work, particularly by private doctors. The Ministry of Health memorandum, already cited, in drawing attention to the advantages of immunisation, states that about 60,000 cases of diphtheria, with an average of approximately 3000 deaths, are notified annually in England and Wales.

Compulsion is out of the question in this country, and except for sporadic efforts by individual medical officers of health, frequently those of relatively small districts, propaganda is non-existent. Yet nothing is more certain than that well-devised and well-presented reasoned propaganda would meet, as it always has met wherever tried, with a ready response. The public is not really reactionary and stupid about the welfare of its children; but merely, in this matter of the prevention of diphtheria, almost completely uninstructed.

Influenza

In the week ending last Saturday (Feb. 4th) the number of deaths from influenza in the 118 great towns of England and Wales was **1911**, compared with 681, 1041, 1589, and 1934 in the previous four weeks. In London the number was **368**, compared with 93, 242, 338, and 370. The course of the epidemic in the several geographical regions of England and Wales is shown in Table I., taken from

TABLE I

—	118 great towns.	South-eastern area.	Greater London.	Northern area.	Midland area.	Eastern area.	South-western area.	Wales and Monmouthshire.
1932 Dec. 17th	0·22	0·17	0·17	0·26	0·27	0·21	—	0·15
,, 24th	0·30	0·13	0·17	0·35	0·69	0·10	0·23	0·23
,, 31st	0·77	0·39	0·31	0·76	1·95	0·10	0·23	0·38
1933 Jan. 7th	1·73	1·22	1·04	1·70	3·65	0·42	0·57	0·38
,, 14th	2·64	2·56	2·36	2·78	3·25	1·78	0·91	0·98
,, 21st	4·04	3·73	3·63	4·81	4·32	1·36	1·81	1·58
,, 28th	4·91	4·06	4·08	5·66	5·08	5·98	2·60	7·15

the Registrar-General's Weekly Return for the week ended Jan. 28th, from which it will be seen how sharp was the rise in death-rate in the eastern area of England and in Wales, regions which had remained immune for two or three weeks after the others were affected. The south-western area still has the best record.

Figures for some of the principal towns of England and Wales will be found under the heading of Infectious Disease during the week ended Jan. 28th. In Scotland in the week ending last Saturday the decline was interrupted, and the 16 principal towns reported 98 deaths compared with 111, 88, and 84 in the previous three weeks. Small increases were noted in Glasgow, Edinburgh, and Dundee, where the totals were 19, 18, and 31 respectively.

TABLE II

—	Ages 0–25		25–45		45–65		65+		Total deaths
	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	
1932 Dec. 17th	15	17·6	9	10·6	21	24·7	40	47·1	85
,, 24th	23	19·2	19	15·8	34	28·3	44	36·7	120
,, 31st	43	14·2	70	23·1	89	29·4	101	33·3	303
1933 Jan. 7th	75	11·0	143	21·0	214	31·4	249	36·6	681
,, 14th	112	10·8	196	18·8	336	32·3	397	38·1	1041
,, 21st	156	9·8	311	19·6	525	33·0	597	37·6	1589
,, 28th	164	8·5	338	17·5	649	33·5	783	40·5	1934

Table II., which sets out the age-distribution of deaths from influenza during the past seven weeks, shows that the proportion of deaths in the younger age-groups is still falling.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JAN. 28TH, 1933

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 14 (last week 16); scarlet fever, 1667 (last week 1965); diphtheria, 781; enteric fever, 12; acute pneumonia (primary or influenzal), 4821 (last three weeks 2816, 3456, and 3781); puerperal fever, 36; puerperal pyrexia, 156; cerebro-spinal fever, 66 (last two weeks 47 and 61); acute poliomyelitis, 12; encephalitis lethargica, 9; dysentery, 12; ophthalmia neonatorum, 61. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Jan. 31st–Feb. 1st was as follows:—Small-pox, 44 under treatment, 5 under observation (last week 40 and 4 respectively); scarlet fever, 1615; diphtheria, 1625; enteric fever, 7; measles, 263; whooping-cough, 637; puerperal fever, 24 (plus 8 babies); encephalitis lethargica, 229; poliomyelitis, 3; "other diseases," 347. At St. Margaret's Hospital there were 10 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 19 (0) from measles, 10 (5) from scarlet fever, 68 (13) from whooping-cough, 55 (14) from diphtheria, 55 (13) from diarrhœa and enteritis under 2 years, and 1934 (370) from influenza. The figures in parentheses are those for London itself.

The towns which reported the largest number of deaths from influenza were as follows, last week's figures being given in parentheses: Manchester 100 (106), Sheffield 85 (49), Stoke-on-Trent 72 (58), Bristol 65 (59), Leeds 56 (49), Liverpool 49 (52), Bolton 43 (29), Leicester 37 (16), Nottingham 37 (26), Cardiff 36 (3), Swansea 28 (6), Hull 27 (13), Birmingham 24 (38), Oldham 22 (12), St. Helens 22 (19), Stockport 22 (15), Rochdale 21 (12), Warrington 21 (7), Salford 20 (18), Wigan 20 (6), Middlesbrough 15 (21), Portsmouth 12 (25), Sunderland 11 (15). In Greater London the areas chiefly affected were: West Ham 24 (28), Croydon 22 (11), Leyton 14 (10), Ealing 13 (15), Tottenham 11 (13), Walthamstow 10 (11).

The deaths from enteric fever were reported from Acton and Stockport. Four fatal cases of measles were reported from Hull. Deaths from whooping-cough were widely distributed, each 4 being reported from West Ham, Leeds, St. Helens, and Salford; each 3 from Manchester and Sheffield. Diphtheria accounted for 6 deaths at Manchester, each 4 at East Ham and Leeds.

The number of stillbirths notified during the week was 266 (corresponding to a rate of 43 per 1000 total births), including 37 in London.

CORRESPONDENCE

THE ADMISSION OF WOMEN TO THE G.M.C.

To the Editor of THE LANCET

SIR,—The increased representation of general practitioners on the General Medical Council has encouraged us to make articulate a suggestion which has been whispered for a long time. Why should there not be a woman member of the Council?

The number of women on the Medical Register now reaches the respectable figure of 5391 out of a total of 55,932. This number would not justify a claim to separate representation, and such a proposal would in any case be contrary to the whole policy of the profession and is not what we have in mind. The proceedings of the Council show that the great majority of the matters which come before it concern practitioners and patients of both sexes. The experience of public bodies has proved beyond the necessity for argument the advantage of having women to share in the grave responsibility of forming decisions on such questions. The fact that the General Medical Council is the final authority on many issues makes it all the more important that the membership should be as representative as possible.

The time is approaching when candidates will be chosen by local associations, and we should be glad to think that this point of view would be borne in mind by those making the selection. The excellent public work already done by those women selected to serve as officers, representatives on committees, &c., would suggest that it should not be impossible to find a woman candidate worthy of the honour and acceptable to the whole profession.

We are, Sir, yours faithfully,

JANE WALKER,
LETITIA FAIRFIELD.

Harley-street, W., Feb. 6th, 1933.

MIGRAINE AND THE "BRIDGED-IN" SELLA TURCICA

To the Editor of THE LANCET

SIR,—In their interesting account of Migraine in your issues of Jan. 21st and 28th, Dr. Macdonald Critchley and Dr. F. R. Ferguson are good enough to refer at some length to a paper that I contributed recently to your columns,[1] in which I described a type of menstrual headache that seemed to me to be sufficiently characteristic to permit of its differentiation from ordinary migraine. The important practical result of my work was that many of my cases were relieved of their distressing symptoms by the administration of an active ovarian follicular hormone such as theelin, and I am glad to know that Drs. Critchley and Ferguson can endorse the therapeutic value of such treatment, although they dislike the explanation that I suggested of the cause of the headache, and prefer to continue to regard it as a "migraine variant"—a term which makes up in elasticity what it lacks in precision.

In a large proportion of my cases I found that certain abnormalities in the sella turcica could be demonstrated radiologically, and on this account and for various other reasons I formed the opinion that menstrual headache might be due to increased local tension in the pituitary fossa. The most frequent radiological abnormality was calcification of the interclinoid ligaments, but I was careful to say explicitly that I did not believe that the calcification could by itself cause any compression of the pituitary. Drs. Critchley and Ferguson "feel fairly certain" of this, and I only mention the point because I think the relevant paragraph of their paper may leave the cursory reader with the mistaken impression that I do in fact hold this view. My hypothesis was (and still is) that the local tension in the sella turcica is due to an overdevelopment of the diaphragma sellæ and that the interclinoid calcification may be taken as an index of its existence.

In disputing the probability of this hypothesis Drs. Critchley and Ferguson disregard many of the points that I put forward in its favour and that seem to me important; they are content to rely on the fact that they have collected several cases of "bridged-in sellæ" from patients who have never suffered from migraine. In my paper I described two cases of this type in women who never had headaches until gynæcological operations were performed which involved gross interference with the ovaries. It is clear, therefore, that even in women, interclinoid calcification may be symptomless, but the fact remains that my radiological colleague Dr. C. G. Teall has not yet found a case in a woman who did not complain of menstrual headache. In men I have to admit that it may be more frequently found, and I now have notes of two cases without headache.

Of the three cases mentioned by Drs. Critchley and Ferguson in this connexion, two are men and the third a woman with "migraine epilepsy." It is perhaps unfair to criticise prints from radiograms of this region of the skull unless they have been specially produced, but, although I accept the two male cases as instances of bridging, the picture of the third case (Fig. 4) seems, both to Dr. Teall and to me, to be that of a perfectly normal sella turcica. With his considerable experience of this matter, Dr. Teall tells me that he cannot be certain of "bridging" without radiograms taken in the antero-posterior plane, and it would be interesting to know if Drs. Critchley and Ferguson have had this additional investigation carried out.

Finally, Drs. Critchley and Ferguson mention the case of a woman "who has an almost completely 'shut-in sella' and yet gives a history of typical migraine attacks in addition to the menstrual headache." This case seems to them to argue in favour of their view that the intermittent headache I described was a migraine variant. The force of the argument escapes me. The perusal of Dr. Critchley's and Dr. Ferguson's paper, it is true, left me in some doubt as to what I might properly regard as typical migraine, but if a woman has it and in addition has a shut-in sella, I see no reason why she should not have a menstrual headache as well. What I should like to know is whether or not her menstrual headache is relieved by treatment with the ovarian hormone, for if it is, and

[1] THE LANCET, 1932, ii., 229.

the "typical migraine" remains, it might be argued that this case clearly differentiated the two conditions.

I am, Sir, yours faithfully,

A. P. THOMSON.

Edgbaston, Birmingham, Feb. 4th, 1933.

EARLY DIAGNOSIS OF MALIGNANT DISEASE

To the Editor of THE LANCET

SIR,—In an annotation on this subject last week you said that "except by accident, for example during the routine microscopical investigation of a uterus or a breast removed for another reason, it is probable that really early lesions are never detected." I venture to point out that the commonest form of malignant disease of the uterus is carcinoma of the cervix, and that in the majority of cases this starts on the outside and can be suspected in its early stages upon a simple inspection of the cervix. Further on you state that periodic examination must include examination per vaginam and per rectum. Of course such examination would include these; they take exactly five minutes to carry out by means of a vaginal speculum and an illuminated proctoscope.

Everybody agrees that early diagnosis of malignant disease is difficult and must be left to the specialist, but to exclude any abnormality of the organ where accessible cancers occur is simple and should be an everyday duty of the general practitioner. I entirely agree with Dr. Maurice Shaw that such examinations do free people from the subconscious, and sometimes conscious, bogy of cancer. If it is the opinion of some people that propaganda in favour of such examinations may create fear, the least the medical profession can do is to make it known that they are willing to carry out such a procedure without the patients feeling that they are being laughed at. It is quite time the medical profession did something positive towards getting rid of cancerphobia, instead of taking up the negative and hopeless attitude that is at present so common.

I am, Sir, yours faithfully,

MALCOLM DONALDSON.

Harley-street, W., Feb. 7th, 1933.

THE INDUSTRIAL DOCTOR

To the Editor of THE LANCET

SIR,—I am particularly interested in No. XIII. of your series "The Doctor's Day" as I have had a certain amount of experience as an industrial doctor—H.E. and mustard gas, not food—and am a humble member of the Council of Industrial Medicine. But I wish your author had stressed the lack of special training in industrial medicine in this country. I am not going to preach on my hobby, but I cannot help wishing that people, especially industrials of all classes, would look into the matter and recognise that the present system is not adequate to give the best service, and that even though the certifying factory surgeon may fill in forms very well, only a few of his kind have the time to give all their energies to this most interesting medico-legal-psychological specialty. Even a certifying surgeon ought to have the opportunity of taking a course in what he is to be regarded as specially knowing. Universities in our great urban centres should easily be able to give a first part of theory and a second part of paid practical work to one who wants to take up industrial medicine, while a diploma in this subject would help in deciding appointments as certifying surgeon, factory doctor, or medical referee.

Another matter which needs further discussion is one which your author leaves out entirely—viz., the relation of the factory doctor to the panel doctors of his workers. It seems from his description of his day that he is doing a lot of the work which is paid for to the panel doctor. Personally I do not like the factory doctor to *be* the panel doctor of the workers in his works, as this smacks of compulsion in choice of doctor. Moreover it is better, as I see it, to keep oneself clear, save for medical, surgical, and first-aid, and such work as the factory nurses can do—rest and a dose of salts or aspirin, for instance—from encroachment on the work of a panel doctor. He would better remain the industrial expert to whom the panel doctor should apply before certifying incapacity, so that his facts may be the more accurate, and so that he may get the special knowledge of the industrial lesion possessed by a properly trained industrial doctor but hardly to be expected in a busy general practitioner. And why should he do the other fellow's work and not draw his pay also?

I am, Sir, yours faithfully,

H. G. P. CASTELLAIN.

Moseley, Birmingham, Feb. 7th, 1933.

PULMONARY ASBESTOSIS

To the Editor of THE LANCET

SIR,—In your report of the proceedings of the Tuberculosis Association last week I am reported to have said that "an interesting feature of the disease was the extreme length of time that elapsed as a rule between the exposure to the dust and death." I actually referred to the length of time, as a general rule, between the exposure to the dust and the onset of symptoms, which as I pointed out may even commence several years after the patient has left the factory. I also pointed out that pulmonary asbestosis was a more serious disease than silicosis, proving fatal on an average after about 13–15 years' employment as compared with 32–42 years in silicosis (figures from report of Inspector of Factories and Workshops 1931).

I am, Sir, yours faithfully,

Harley-street, W., Feb. 5th, 1933. PHILIP ELLMAN.

Mr. A. MORTIMER, secretary of the Wholesale Drug Trade Association, writes that the members of his association welcome the removal of ambiguity in thyroid dosage by the new definition in the British Pharmacopœia, 1932 (see THE LANCET, Jan 28th, p. 208, and Feb. 4th, p. 277).

A REMEDY FOR INFLUENZA.—Dr. Laver informs us by cable from Kalgoorlie, Western Australia, that he finds the following treatment specific for influenzal pneumonia: sodium salicylate grs. 2, glycerin ʒi, and (? tincture of) strophanthus ℥½—hourly from morning till midnight; hot drinks between doses to help diaphoresis; and mustard on the chest.

SOLAR, TERRESTRIAL AND COSMIC RADIATIONS.—An international association has been formed for the purpose of study of this subject. The headquarters have been established at Nice, because the clear atmosphere there is particularly suited to such observations as the society hopes to undertake. Meetings will, however, be held each year in different towns, and a report is soon to be issued summarising the results which have already been obtained. Further particulars may be had from the president of the Société Médicale, 24, rue Verdi, Nice.

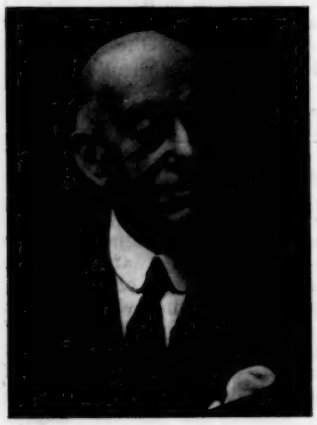
OBITUARY

SIR FREDERIC HALLETT

IT is not given to every man to live to see his own name perpetuated by those he has served, in the award of an annual prize bearing his name, which was the privilege of Sir Frederic Hallett, who died, in his seventy-third year, at his home, Point Close, Long Wittenham, Berkshire, on Feb. 5th, 1933.

Born in May, 1860, Frederic Greville Hallett was the fourth son of the late James Alfred Hallett, J.P., of Putney. He was educated at Westminster, privately, and abroad, and at the age of 17 he became a junior clerk at the Royal College of Surgeons of England, thus beginning an association with the Royal Colleges which was to endure for 50 years.

In 1882 he was appointed assistant secretary of the College and at once became deeply immersed in the formation and constitution of the "Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England"—known as the English Conjoint Board—of which he became the first secretary in 1886, a post which he held until his retirement in December, 1927. He continued the management of the administrative side of the examinations of the Royal College of Surgeons—for the Fellowship and for the Licence in Dental Surgery—being given the title of Director of Examinations of the College of Surgeons in January, 1914. In these two posts Hallett's genius for administration and organisation found its true outlet, for the entire system under which the examinations of the English Colleges are conducted—a system which has won the admiration of educational authorities all over the world, and in not a few instances has served as a pattern—was his creation. When at the invitation of the Carnegie Foundation in 1912 he visited America to explain the working of the system, the success of his visit cemented the sympathy and understanding between the medical educational authorities in both countries, and the establishment of the National Board of Medical Examiners of the United States, with its procedure similar to that of the Royal Colleges, was largely due to Hallett's inspiration, sympathy, and guidance. The system proved, for the first time, that it was possible to conduct a purely external examination of large numbers of candidates in such a way that not only could justice, expedition, and accuracy be obtained, but also that the result of a candidate's examination could be given to him on the same day as he completed his examination. It is safe to say that, until some better means of selection than the examination system can be evolved, nothing fairer than the "conjoint system" is likely to be created. Under Hallett's inspiration it permits the retention of a human element, and there must be many practitioners to-day who owe not a little to the ever-ready sympathy and advice, in failure or success, of Hallett, while "Hallett's pink papers for pilled people" are still handed to certain unlucky ones. His work for the Royal Colleges in connexion with the building of the first Examination Hall on the Embankment and again with the building of the present Hall in Queen-square, Bloomsbury, was recognised by an honorarium of £500 from the Royal Colleges in 1909. The removal was made not without reluctance, and it was due to Hallett that its advantages were soon demonstrated.



SIR FREDERIC HALLETT
[Photograph by Russell

In 1902 the Royal Colleges established the Imperial Cancer Research Fund, of which Hallett became the first secretary, in addition to his other duties. He retained this position until last year when he resigned on account of his health, and the executive committee of the fund in the last annual report express their deep appreciation "of the way he has guided the policy of the fund during its 30 years of existence, and of his far-sighted ability in drafting its constitution." In recognition of these services Hallett was elected a vice-president of the Fund and awarded a pension.

On the outbreak of war Hallett took over, as additional duties, the responsible work of secretary to the Committee of Reference—a statutory committee appointed to arrange for the calling up and demobilisation of the medical staffs of the London hospitals—besides acting as secretary to the joint delegates of the Committee of Reference and of the Central Medical War Committee, and to various subcommittees of the delegates. It will, thus, be believed that during the war period he would have little spare time, but he found it and used it in helping the boy scouts as the Commissioner for the Hammersmith district, and in serving as a special constable in the Headquarters Division from 1914–17. In 1920 his war work was recognised by the award of the O.B.E., and on his retirement, in December, 1927, after 50 years of devoted service to medical education in general and to the Royal Colleges in particular, Hallett received the honour of knighthood. In 1928 the Council of the Royal College of Surgeons desired to make him a personal gift to commemorate his outstanding work for the College during half a century, and, in deference to his own wish, instituted the Hallett prize which is awarded twice yearly at each primary examination for the Fellowship to the candidate who most distinguishes himself in the examination in anatomy and physiology.

Such is the brief record of one whose zeal and devotion to duty were an inspiration. But outside the official duties, which occupied so much of his life, Hallett was a man of many parts. He was an active J.P. for the county of Berkshire. He was a devoted churchman throughout his life; his energies, some 30 years ago, in the parishes of St. Albans, Fulham, and later at St. John's, Holland-road, are still remembered with gratitude, while during his later years his advice in the deliberations of the church in the diocese of Oxford was widely sought and valued. He was an active Mason, having been initiated in the Old Westminster's Lodge in 1891, becoming Worshipful Master in 1902–03 and serving as treasurer of the lodge from 1906–20. He was promoted to London rank in 1912, and when he finally resigned in 1929 he was elected an honorary member of his lodge.

And always the thing nearest to his heart was his home. In 1884 he married Margaret Elizabeth Lane, the daughter of James Lane, F.R.C.S., and niece of Samuel Lane, whose name is so intimately associated with the foundation of St. Mary's Hospital Medical School. Many years ago he gave up playing golf and billiards—at both of which he could well hold his own—because they kept him away from his home, and he found his main recreations in fishing and boating, for the river runs at the end of his beautiful garden. His well-known hobby was the art of illuminating, and many are the addresses and rolls of honour which testify to his artistic skill and ability, notably the beautiful book of the Roll of Honour in the House of the British Medical Association, and the illustrations to the Legacy Book of the Society for Relief of Widows and Orphans of Medical Men. Specimens of these were reproduced in our pages recently (THE LANCET, 1932, i., 63), and while the absence of colour modifies their beauty, the grace of line and the dexterity of penmanship are very evident.

Throughout his life, sharing all his work and interests, he had the help and support of his wife, who during the last painful months of his fatal illness had scarcely left him. That illness, which struck him down in July, 1931, was borne with the fortitude and courage which sprang from a profound faith and he was bravely cheered by the loving care of Lady Hallett. She survives him, with a son and a daughter, the wife of Mr. H. H. Rew, who succeeded her father in his post at the Royal Colleges.

VICTOR EDGAR SORAPURE, M.B., F.R.C.S. Edin.

THE death of Dr. V. E. Sorapure occurred, after a long resistance to a tuberculous infection manifesting many painful symptoms, in a nursing home in Bournemouth on Jan. 29th, at the age of 58.

Dr. Sorapure received his medical education at the Universities of Edinburgh and St. Andrews and the medical schools of Dundee and Liverpool. He was destined by his parents for a business career in the West Indies, but had set his heart on becoming a doctor and, largely owing to his own enterprise, he achieved his desire to be trained in England. He graduated as M.B., Ch.B. Edin., in 1899, and later took the F.R.C.S. Edin. and became a resident medical officer at the Liverpool Hospital for Women. He then returned to the West Indies, practised successfully there, and later in the United States. He was for a time professor of pathology and clinical medicine in the Fordham University, was assistant physician to the Polyclinic Hospital, and medical adviser to the Life Extension Institute. He made some interesting communications to the American medical press on locomotor-ataxy and allied subjects, and was carrying on a large practice in New York when, at the outbreak of war, he returned to England with a wife and three young children to serve as a temporary officer in the R.A.M.C. He was stationed for a time in France, but was finally attached to the Hampstead Hospital, where he worked under Sir James Mackenzie. With Mackenzie he made a close study of certain of the problems associated with altered blood pressures, as exemplified in communications to this paper, but his main literary work is seen in his considerable contributions to the Oxford Index of Therapeutics, which appeared in 1921 under his editorship, as a compendium of general medicine, with a direct appeal to the family doctor.

The task of editing a collection of essays of varying value Sorapure discharged with zeal and ability, and at the same time he obtained a large practice in London, having given up the idea of returning to New York. His industry was striking, and a personal friend and medical colleague writes of him that "very soon he could scarcely cope with the work which came his way. He never scamped a case; he never thought of himself or of his health and never took a holiday nor a week-end off. Until he was over 56 he saw patients, Sundays and weekdays alike, from 8 A.M. till after midnight. Once he told me that at that age he was working as long hours and doing as heavy work as when he was 30. He became known to a wide circle of practitioners as well as patients as 'having a flair for diagnosis.' Some two years ago the strain thus indicated began to tell; thereafter, until the end, life was for him a prolonged battle against ill-health. Patients and colleagues who worked with him will not easily forget Sorapure's patience and unselfish personality."

JOHN STEPHENSON, C.I.E., F.R.S.

LIEUT.-COLONEL, I.M.S. (RETD.)

BY the death of Colonel Stephenson in London on Feb. 2nd the Indian Medical Service loses one of its most distinguished scientific members. Born at Padiham, Lancs, in 1871, he was educated at Burnley Grammar School and Owen's College, where he took many prizes and obtained honours at the M.B. examinations of both Manchester and London University. He had previously taken the London B.Sc. and went on later to take the D.Sc., as well as the F.R.C.S. Eng. After holding resident posts at the Manchester Royal Infirmary, he entered the Indian Medical Service in July, 1895, at the head of his batch, and had a varied career in India, including active service on the north-west frontier of India in 1897 with medal and clasp, and in Egypt during the war, when he was mentioned in despatches. From 1900 to 1906 he held various civil appointments, on plague duty and in civil surgeonships, but his most important work began in 1906 when he was appointed to the chair of biology in the Lahore Government College, and six years later to that of zoology. At the same time he was made principal of the college, and in 1918 reached the very unusual position for a medical officer of vice-chancellor of the Punjab University—a remarkable tribute to his personality and ability. He was a good linguist, and published the text with translation and commentary of the Hadiqatu-l-Haqiqat. His heart, however, was in his work as a zoologist, and he became an acknowledged authority on the oligochætes and was elected F.R.S. in 1930. He was also editor of the Fauna of British India series. After retiring from the service he was lecturer in zoology from 1920–29 in the University of Edinburgh, and continued to the end of his life a number of valuable studies at the South Kensington Natural History Museum. Colonel Stephenson was a modest and unassuming man, popular with his co-workers and students. The fact that he never enjoyed robust health makes more remarkable the amount of work which he accomplished.

PROF. WILLIAM PHILLIPS GRAVES

WE announced last week the death of Prof. William Phillips Graves, an outstanding figure in gynæcology, whose reputation extended internationally far beyond Harvard, which he adorned, and Boston where he

practised. We have received from Prof. Blair Bell the following testimony to the man and his work :—

"William Phillips Graves achieved greatness in his special subject—gynæcology—not only because of his natural ability, but also because he was a man of great character. Since they have not been published, it will not be inappropriate to reproduce, as a text for the few words of appreciation that follow, the short eulogy spoken to him when he was admitted an Honorary Fellow of the British College of Obstetricians and Gynæcologists in December last.

'In this world of haste and hurry—conditions not unknown in your own country—you stand out in our branch of medicine as a man of quiet contemplation, wise discretion, and sober judgment. Your influence on the progress of gynæcology has been profound, not only in the United States of America, but wheresoever there exists a parcel post for the transport of your classical works. You are an artist, too, and the beautiful illustrations drawn by your own hand, which adorn your books and papers, are the admiration of all. You bring artistry to your craft. You are, besides, a thinker; and beneath a deep reserve lie golden thoughts. In honouring you, we honour obstetrics and gynæcology.'

"In the United States of America, Dr. Graves—for that is how all medical practitioners there, whether professors, surgeons, or physicians, are addressed—was regarded as *the* sound, conservative, yet progressive gynæcologist, and as a man of great experience and wide learning. I received the impression on both the occasions I was in America that he occupied the same position in gynæcology as that which the late Whitridge Williams held in obstetrics—both were trusted; and their opinions were held in unqualified respect.

"I remember so well expressing in one of the communications I made there—I think to the A.M.A.—my views on the biological value of the ovaries, and the importance of conservative surgery in respect of them. I was told beforehand that Graves would criticise my views, that he, as many of my colleagues in this country and elsewhere, held no brief for the importance of the ovarian function. Graves did not speak; but he came to me afterwards and said: 'I intended to oppose your views, but you made some points that I have not heard before; I have not changed my views yet; I must consider the matter afresh.' When he was in Manchester years later, when I read another paper on the subject, he told me he had been converted. I merely quote this story to show the open-mindedness of the man, and the cautious and fair way in which he formed his judgments.

"It is quite unnecessary for me to speak in detail of his wonderful text-book, his recent work 'Female Sex Hormonology,' or of his numerous papers. They are all marked by the same desire for truth, and by the same lucid thought and expression. His artistic ability is shown in the beautiful illustrations which he made for his medical publications. He also drew for his own pleasure, and for that of his friends, and was not only a draughtsman, but had also very sensitive and artistic feelings. Again let me give an illustration. He had recently purchased a country estate, and in describing this to me he said: 'There is a very old ash-tree by the lawn, but it is dead, the branches are bare. A friend asked me why I did not cut it down. I told him to come and see it in the moonlight.' I had long known that he admired our trees more in their winter bareness, when the outlines of their limbs are clear-cut against the sky or in the moonlight, than when they are in their summer dresses. That shows the kind of man he was in his innermost self.

"He was a deep reader of fine literature, which he was ever ready to discuss, and a great practical surgeon and accomplished teacher. Many of us have lost a close personal friend—a man who was a great gentleman, a sportsman, and a learned and inspiring colleague."

MEDICAL NEWS

Royal Colleges of Physicians of London and Surgeons of England.

At the final examination of the Conjoint Board held from Jan. 2nd–26th the following candidates were approved in the subjects indicated, but are not yet eligible for diplomas :—

Medicine.—D. R. Ashton, St. Bart.'s; A. D. Aveling, Camb. and London; J. E. M. Ayoub, Oxf. and St. Thomas's; L. J. Beynon, St. George's; I. N. Blumger, St. Bart.'s; W. A. Bowdler, St. Thomas's; C. G. Bree, Univ. Coll.; A. Brown, King's Coll.; Hilda M. Brown, Royal Free; S. G. Browne, King's Coll.; T. J. K. Brownlees, St. Bart.'s; J. H. J. Crosse, Camb. and St. Bart.'s; W. J. B. de Gruchy, Camb. and St. Thomas's; A. E. De Sa, Bombay; R. G. Fear, St. Bart.'s; M. K. Gadgil, Bombay and West London; J. Gordon, Middlesex; H. T. J. Hynes, St. Bart.'s; A. H. Ismail, Birmingham; B. F. Jackson, St. Bart.'s; J. F. Jarvis and F. W. H. Kent, King's Coll.; S. H. Kessler, Long Island and King's Coll.; Hilda I. Lanceley, King's Coll.; S. Lee, Westminster; A. G. C. Mason, Middlesex; Ellen Mayer, King's Coll.; C. R. Naidu, Bombay and St. Bart.'s; S. D. J. Nand, Manchester; L. G. Nicholas, Cardiff; R. M. M. C. Orpwood and W. M. Oxley, St. Bart.'s; H. E. S. Pearson, St. Thomas's; G. D. Pirrie, Camb. and King's Coll.; M. L. Platt, Middlesex; M. Richmond, London; M. A. Rugg-Gunn, Camb. and St. George's; I. M. Shulman and R. T. Simcox, St. Bart.'s; E. J. Smith, King's Coll.; P. G. Stainton, Guy's; B. A. Thomas and W. H. D. Trubshaw, St. Bart.'s; G. N. Wardle, St. George's; C. E. M. Ware, St. Bart.'s; H. Waterman, Leeds; Elma Wolmarans and T. M. Wynter, Royal Free.

Midwifery.—Winifred L. Acraman, Cardiff; S. B. Adams, Bristol; S. R. Ali, Bombay and King's Coll.; J. E. O. Amegatcher, Camb. and St. Thomas's; D. A. Andersen, Univ. Coll.; J. B. Andosca, King's Coll.; T. R. Aubrey, Oxf. and Bristol; F. H. Barber, Birmingham; H. J. Barrie, Oxf. and London; A. J. Board, Bristol; J. Boyle, St. Mary's; C. F. R. Briggs, Univ. Coll.; G. O. A. Briggs, Camb. and St. Bart.'s; Hilda M. Brown, Royal Free; P. S. Buckley, Oxf. and London; K. L. Buxton, Camb. and St. Thomas's; H. R. Cara, Liverpool; F. F. Cartwright, King's Coll.; A. S. Cheong, St. Mary's; E. L. Cohen, Camb. and St. Bart.'s; F. H. Coleman, Camb. and London; Dorothy C. J. Cookson, Royal Free; F. E. Corea, St. Bart.'s; C. F. Critchley, St. Thomas's; T. M. Cuthbert, D. L. L. Davies, and E. E. Dodson, St. Bart.'s; Ruth C. Easterling, King's Coll.; L. R. L. Edwards, Guy's; P. J. England, Cardiff; S. M. Evans, Camb. and St. Thomas's; C. Fletcher, St. Bart.'s; P. A. Flood, Camb. and St. Thomas's; G. L. Foss, Camb. and Bristol; T. Foulds, Manchester; H. Goldfarb, Univ. Coll.; C. L. Greening, Durham; E. M. Griffin, Camb. and London; I. H. Griffiths, Cardiff and Middlesex; A. A. Hakeem, Bombay and Manchester; H. W. Hall, Univ. Coll.; Ida M. Hamp, Royal Free; J. H. T. Harrington, Oxf. and St. Mary's; T. N. Hart, Manchester; K. J. Harvey, St. Bart.'s; Pearl M. Heirshberg, Royal Free; G. A. H. Herbert, London; K. Hooper, Guy's; R. H. K. Hope, Univ. Coll.; C. Houghton-Brown, St. George's; A. V. House, Bristol; D. A. Hovenden, St. Thomas's; J. A. C. Hunter, Guy's; R. H. Isaac, St. Bart.'s; A. H. Ismail and G. H. James, Birmingham; J. W. James and Margaret H. James, Univ. Coll.; R. G. James, King's Coll.; D. A. Jennings, Oxf. and St. Thomas's; H. G. John, Cardiff and Univ. Coll.; E. H. Johnson, Leeds; G. P. Jones, Cardiff; N. K. Kai, Univ. Coll.; C. W. C. Karran, Camb. and St. Thomas's; Alice M. Kenny, Royal Free; S. H. Kessler, King's Coll.; E. W. Kinsey, Cardiff and London; Freda H. Knight, Manchester; Mildred G. Latham, Royal Free; C. A. Lewis, Camb. and King's Coll.; Gwladys R. Llewelyn, Bristol; L. G. Mackenzie, Guy's; H. F. McNickle, Otago; J. N. Majumdar, Calcutta and Middlesex; A. B. Marshall, Westminster; Bertha Marston and C. R. Mayou, Birmingham; Lida O. Meredith, Royal Free; R. H. Moodie, Bristol; W. B. Mumford, Camb. and St. George's; C. J. B. Murray, Middlesex; C. R. Naidu, Bombay and St. Bart.'s; J. H. Neal, Middlesex; P. B. L. Nicholas, London; W. L. Ogle, Guy's; G. S. W. Organe, Westminster; A. J. Owston, Camb. and St. Bart.'s; H. S. Pasmore, Univ. Coll.; S. Paul, Guy's; J. P. S. Peck, Camb. and London; V. G. Peckar, Univ. Coll.; E. Pereira, St. George's; A. H. Pirie, Camb. and St. Bart.'s; R. R. Prytherch, Camb. and King's Coll.; J. J. C. Rainsbury, Sheffield; K. S. Ramaswami, Madras and Guy's; Bridget M. Ramsey, Camb. and Royal Free; B. V. Rao, Mysore and London; R. S. Richmond, Camb. and St. Mary's; L. R. J. Rinkel and G. C. D. Roberts, Camb. and St. Thomas's; I. G. Robin, Camb. and Guy's; Marjorie C. A. Robson, Camb. and Birmingham; J. A. Ross, Camb. and Liverpool; J. E. Rowlands, Guy's; J. Schofield, St. George's; I. I. Seidman, St. Bart.'s; E. P. Sharpey-Schafer, Camb. and Univ. Coll.; A. Shatz, Cardiff; M. Shun-Shin and T. O. C. Smith, Univ. Coll.; D. W. Smithers, Camb. and St. Thomas's; P. G. Stainton, Guy's; A. B. Stenhouse, Oxf. and St. Thomas's; K. R.

Tattersall, St. Thomas's; Barbara M. G. Taylor, Leeds; T. P. Thamotheram, Ceylon and King's Coll.; H. W. Thomas, London; Mary G. Thomas, Bristol; D. M. Thomson, St. Bart.'s; H. B. Tipler, Camb. and London; J. A. Vermylen, Univ. Coll.; G. N. Wardle, St. George's; Elma Wolmarans, Royal Free; O. H. M. Woodbridge, Guy's; L. S. F. Woodhead, Westminster; T. M. Wynter, Royal Free; R. M. Yeo, Camb. and St. Thomas's; A. R. C. Young, St. Bart.'s; and I. Zieve, Cape and Guy's.

Surgery.—G. G. Airey, St. Mary's; C. F. S. Alken, Oxf. and Middlesex; J. E. O. Amegatcher, Camb. and St. Thomas's; D. A. Andersen, Univ. Coll.; T. P. Ayre, Durham; G. F. Barran, St. George's; H. R. Bathurst-Norman, Oxf. and St. Thomas's; R. B. Bell, Middlesex; W. T. C. Berry, Camb. and St. Bart.'s; N. B. Betts, Camb. and St. Thomas's; R. W. Billington, Camb. and Westminster; F. M. Braithwaite, Camb. and Manchester; F. J. Brice, London; G. O. A. Briggs, Camb. and St. Bart.'s; G. C. Brown, Camb. and St. Mary's; P. S. Buckley, Oxf. and London; P. G. Burgess, Oxf. and Manchester; E. G. L. Bywaters, Middlesex; A. H. Charles, Camb. and St. George's; M. M. D. Chughtai, Punjab and Univ. Coll.; K. R. D. Coles, Guy's; J. Collinson, Camb. and Leeds; L. Z. Cosin and H. T. Croudace, Guy's; T. M. Cuthbert, St. Bart.'s; E. M. Darmady, Camb. and St. Bart.'s; W. Dean, Westminster; G. De Lacey, Cardiff and London; Helen E. Dimsdale, Camb. and Univ. Coll.; P. E. Dipple, St. Bart.'s; J. H. Dixon, Camb. and St. Thomas's; R. J. Drummond, Guy's; J. J. A. Embleton, St. Mary's; Dorothy K. Emery, Camb. and Univ. Coll.; P. R. Evans, Manchester; H. D. Fleming and P. A. Forsyth, St. Thomas's; L. B. Furber, St. Bart.'s; V. V. Garde, London; W. L. George, St. Mary's; R. G. B. Gilbert, St. Thomas's; M. S. Good, Oxf. and St. George's; D. R. Gray, Camb. and Charing Cross; E. M. Griffin, Camb. and London; T. F. R. Griffin, St. Mary's; S. J. Hadfield, St. Bart.'s; V. E. L. Hart, London; N. H. Harwood-Yarred, Camb. and St. Thomas's; R. Hill, Camb. and London; F. G. Hinks, Camb. and St. Thomas's; I. W. Hockley, St. Thomas's; M. I. A. Hunter and M. J. Ingram, Camb. and St. George's; C. W. John, St. Bart.'s; W. A. Johnson, St. Mary's; A. E. Jones, Guy's; N. H. Jones, St. Bart.'s; S. E. L. Kahla, London; A. B. King, Univ. Coll.; E. W. Kinsey, Cardiff and London; H. B. Lee, St. Bart.'s; C. A. Lewis, Camb. and King's Coll.; M. J. Lindsey, Guy's; M. J. McCormack, London; W. S. McKenzie, Camb. and Middlesex; J. N. Majumdar, Calcutta and Middlesex; T. F. Malcolm, Manitoba; T. C. Maling, Camb. and St. Thomas's; J. W. Maycock, Camb. and Middlesex; K. S. Menon and H. N. Miles, King's Coll.; A. Miller, Camb. and St. George's; S. C. Misra, Lucknow and Middlesex; G. T. L. F. Morris, Birmingham; H. Mower, St. George's; P. D. Mulkern, St. Thomas's; W. B. Mumford, Camb. and St. George's; Eileen A. Neilson, Univ. Coll.; W. L. Ogle and L. C. Oliver, Guy's; G. S. W. Organe, Westminster; J. P. S. Peck, Camb. and London; A. K. Price, St. Thomas's; S. A. Propert, Camb. and St. Thomas's; B. V. Rao, London; K. Robson, Camb. and Middlesex; Christine M. Rooke and R. D. Rowlands, Univ. Coll.; A. L. Secchi, St. Thomas's; R. Shackman, St. Bart.'s; E. P. Sharpey-Schafer, Univ. Coll.; J. V. Shemilt, St. Thomas's; P. P. Sheth, Bombay and Middlesex; M. Shun-Shin, Univ. Coll; T. W. Smailes, Camb. and Leeds; D. W. Smithers, Camb. and St. Thomas's; J. G. C. Spencer, Camb. and London; J. T. W. Spiridion-Kliszczewski, Camb. and Westminster; H. G. Stanton, St. Bart.'s; R. H. Swinglehurst, Birm. and London; E. W. Taylor, Camb. and St. George's; T. P. Thamotheram, Ceylon and King's Coll.; H. B. Thomas, Camb. and St. Thomas's; M. Tin, Guy's; H. B. Tipler, Camb. and London; G. E. H. Tisdall, Camb. and St. Thomas's; E. O. Walker, Camb. and Bristol; G. E. Walker, Guy's; G. I. Watson, Camb. and St. Thomas's; C. J. G. White and A. Willcox, Camb. and Middlesex; R. M. Yeo, Camb. and St. Thomas's; and E. C. Zorab, Guy's.

Pathology.—E. M. Abelson, Leeds; J. B. Andosca, King's Coll.; R. M. H. Anning, St. Mary's; J. E. M. Ayoub, Oxf. and St. Thomas's; H. Baker, Manchester; H. J. Barrie, Oxf. and London; G. E. M. Benson, Oxf. and St. Thomas's; L. J. Beynon, St. George's; I. N. Blusger and A. R. Boney, St. Bart.'s; C. F. R. Briggs, Univ. Coll.; J. A. Brocklebank, Guy's; G. C. Brown, Camb. and St. Mary's; N. G. L. Carroll, Liverpool; F. F. Cartwright, King's Coll.; A. S. Cheong, St. Mary's; T. L. Chester-Williams, St. Bart.'s; R. D. Clay, King's Coll.; L. Z. Cosin, Guy's; Margaret C. Cox, Royal Free; S. W. Croome, King's Coll.; J. D. Cruickshank, Birmingham; Hilda M. S. Davidson, King's Coll.; D. O. Davies, St. Bart.'s; Helen E. Dimsdale, Univ. Coll.; G. V. W. Doherty, Guy's; P. J. England, Cardiff; E. Fernandes, King's Coll.; J. M. Flower, Westminster; H. A. Freeman, Liverpool; D. L. Fromow, London; Violet Fry, Bristol; N. W. Gardener, Guy's; B. Gaunt, Birmingham; R. G. B. Gilbert, St. Thomas's; H. Goldfarb, Univ. Coll.; I. H. Griffiths and S. Hales, Middlesex; H. W. Hall, Univ. Coll.; G. L. Hardman, Camb. and St. George's; T. T. Hardy, Oxf. and St. Thomas's; J. H. T. Harrington, Oxf. and St. Mary's; Edith K. Harris, Royal Free and Bristol; K. J. Harvey, St. Bart.'s; C. V. A. Henriques, King's Coll.; E. C. Herten-Greaven, London; J. R. Hill, St. Bart.'s; J. M. Holford, Camb. and St. George's; R. H. K Hope, Univ. Coll.; M. H. Hosny, Birmingham; A. C. L. Houlton, Camb. and St. Bart.'s; T. H. Howell, St. Bart.'s; J. R. Hughes, Middlesex; C. C. Hurst, Manchester; L. R. Jain, Birmingham; R. W. John, Cardiff; E. H. Johnson, Leeds; A. D. Jones, Bristol; G. F. Jones, St. Mary's; V. D. Jones, Univ. Coll.; J. Kingston, London; Joan F. M. Lamplugh, Birmingham; J. H. Lawrence, Leeds; H. B. Lee, St. Bart.'s; J. E. Lewis, Oxf. and Westminster; Louisa A. Loder, King's Coll.; O. Lyth, Guy's; Catherine B. Mackinlay, King's Coll.; J. N. Majumdar, Calcutta and Middlesex; E. H. Markby, Leeds; Bertha Marston, Birmingham; T. D. M. Martin, St. Thomas's; P. C. Matthew, Univ. Coll.; R. F. Matthews, Middlesex; L. H. Mattison, Manchester; E. A. Mayston, Guy's; K. S. Menon, Madras and King's Coll.; J. R. Miles, Cardiff; T. Miles, St. Thomas's; C. Mitchell, Guy's; J. Montgomerie, Birmingham; M. P. Morel, Camb. and St. Bart.'s; C. C. Morgans, Camb. and St. Thomas's; P. D. Mulkern, St. Thomas's; C. R. Naidu, Bombay and St. Bart.'s; S. D. J. Nand, Manchester; Eileen A. Neilson, Univ Coll.; F. J. O'Dowd, Birmingham; D. G. Oehlers, London; A. G. Palin, St. Thomas's; H. S. Pasmore, Univ. Coll.; H. E. S. Pearson, St. Thomas's; V. G. Peckar, Univ. Coll.; R. C. Percival, London; G. Phipps, St. Thomas's; J. W. Piper, Guy's; F. W. M. Plant, Birmingham; E. J. Pryn, Guy's; B. V. S. Rao, Mysore and London; V. B. Reckitt, Guy's; M. Richmond, London; Marjorie C. A. Robson, Camb. and Birmingham; Christine M. Rooke, Univ. Coll.; J. Rosenbaum, St. Bart.'s; M. A. Rugg-Gunn, Camb. and St. George's; M. F. P. Ryan, King's Coll.; C. A. J. Sampson, St. Thomas's; G. H. Saunders, Middlesex; G. E. Scott, Oxf. and St. Thomas's; S. K. Sen, Camb. and St. Bart.'s; G. H. Shaw, St. Thomas's; P. P. Sheth, Bombay and Middlesex; I. M. Shulman, St. Bart.'s; M. Shun-Shin, Univ. Coll.; R. T. Simcox, St. Bart.'s; T. O. C. Smith, Univ. Coll.; L. J. Stoll, Guy's; R. J. C. Sutton, St. Bart.'s; G. L. B. Thurston, Guy's; H. B. Tipler, Camb. and London; F. W. Treadwell, Birmingham; J. R. Vaid, St. Bart.'s; J. L. Whatley and C. S. Whitehouse, Birmingham; V. H. Wilson, Camb. and St. George's; C. R. Wright, Liverpool; and C. H. Yeoh, Oxf. and St. Thomas's.

University of London

Two lectures on the history of medicine will be given in the large lecture theatre of University College medical school, University-street, W.C., at 4.15 P.M. on Wednesdays, Feb. 15th and 22nd, by Dr. J. S. Prendergast (vice Prof. Charles Singer). In his first lecture he will deal with Greek Medicine and in his second with Renaissance Medicine.

University of London Medical Graduates Society

This society was entertained by the Society of Apothecaries of London on Feb. 2nd. The Master (Dr. Cecil Wall) received the members and gave a short address on the history of the society, with special reference to their development as a licensing body for the practice of medicine. Lady Barrett returned thanks. Particulars of membership of the society may be had from the hon. secretaries at 11, Chandos-street, London, W.1.

Royal Sanitary Institute

A sessional meeting of this institute will be held on Friday, Feb. 24th, in the Town Hall, Warrington, at 6.30 P.M., when Dr. John Gifford, deputy medical superintendent of the Winwick Mental Hospital, will speak on Sterilisation of the Mentally Defective. The local secretary is Dr. G. W. N. Joseph, of the health department, Warrington.

Chadwick Lectures

On Tuesday, Feb. 21st, at 5.15 P.M., in the lecture-hall of the Royal Society of Tropical Medicine and Hygiene, 26, Portland-place, London, W., Dr. Matthew B. Ray will deliver a lecture on the Hippocratic Tradition, which will be illustrated with lantern slides. Further particulars of the Chadwick public lectures may be obtained from the secretary, Mrs. Aubrey Richardson, at 204, Abbey House, Westminster, London, S.W. 1.

British Red Cross Society

The British Red Cross Society and Order of St. John Hospital Library has organised three lectures which will be given at the London School of Economics, Houghton-street, Aldwych, London, W.C. On Wednesday, Feb. 22nd, Mr. C. E. A. Bedwell, house governor of King's College Hospital, will speak on the Hospital; on March 1st Mr. Lamb, of the central library, Sheffield, on the Library; and on March 8th Mrs. M. E. Roberts, organising secretary of the society, on the Librarian. All the lectures are at 5.30 P.M.

Hospital Almoners' Association

The annual dinner of this association was held on Saturday last, Feb. 4th, when Miss C. Morris took the chair and presided over the largest annual festivity the association has seen. The toast of Prosperity to the Hospital Almoners was proposed by Sir Frederick Menzies, who in an interesting address outlined the situation of the hospitals now under the control of the London County Council, which since the provisions of the Public Health Act of 1929 has become the largest hospital authority in the world. Sir Frederick, indicating what this must mean in the extension of the work of almoners, recognised that work as now constituting an integral part of hospital administration. Miss M. Edminson, inreply, commented wittily on the public uncertainty as to what is meant by an almoner, and testified to the increasing recognition by all hospitals of the service of the almoners' department. Miss E. Lewis proposed the toast of the guests, with fervour in spite of, as she said, feeling "cowhearted"—an adjective picked up from a timid woman whom she was visiting in the course of her hospital duties. Prof. W. H. Maxwell Telling replied. The function was held in the Hans Crescent Hotel, and was a very successful one.

British Medical Association

The Sir Charles Hastings lecture will be given on Tuesday, Feb. 21st, at 8 P.M. in the Great Hall of the Association's house, Tavistock-square, London, W.C., when Sir Henry Gauvain will speak on Sun, Air, and Sea-bathing in Health and Disease. Lord Dawson will take the chair.

British Institute of Philosophy

Prof. L. P. Jacks, editor of the *Hibbert Journal*, will deliver an address on the Social Sciences and Philosophy at University College, Gower-street, London, W.C., at 8.15 P.M., on Tuesday, Feb. 14th. Tickets can be obtained from the director of studies, University Hall, 14 Gordon-square, W.C. 1.

Royal Dental Hospital

Arrangements have been made at this hospital to hold various post-graduate courses on the use of anæsthetics. On Monday, Tuesday, Wednesday, and Friday afternoons from March 6th to the 18th, and again from April 24th to May 6th, two hours of practical instruction will be given daily; and from March 20th to 31st an intensive course consisting of demonstrations in the in-patient department (at Charing Cross Hospital), and daily practical instruction and lectures in the out-patient department (Leicester-square). Further particulars may be had from the dean at the hospital, Leicester-square, London, W.C. 2.

National Hospital, Queen-square

A post-graduate course is now being held at this hospital and will continue until March. Every weekday, except Saturday, there are out-patient clinics at 2 P.M., and lectures and clinical demonstrations at 3.30 P.M. At noon on Wednesdays and Fridays there are demonstrations on the pathology of the nervous system by Dr. J. G. Greenfield, and on Thursdays on the anatomy and physiology of the nervous system by Dr. Macdonald Critchley and Dr. Denny Brown. Mr. L. J. Paton and Mr. T. H. Just are giving demonstrations on neurological ophthalmology and otology at 4.30 P.M. on Mondays and Thursdays. Further particulars may be had from the secretary of the hospital, Queen-square, London, W.C.1.

Harveian Society of London

On Thursday, March 9th, Mr. William Wright, university professor of anatomy at the London Hospital medical college, will deliver the Harveian lecture, on the Anatomy and Physiology of the Central Nervous System; on April 13th Mr. R. Watson Jones, Mr. E. P. Brockman, and Mr. Bryan Burns will open a discussion on Böhler's Influence on the Treatment of Fractures; and on May 11th there will be a discussion on Modern Methods of Treatment of Acute Specific Fevers, introduced by Dr. R. A. O'Brien and Dr. William Gunn. All these meetings will be in the Paddington Town Hall at 8.30 P.M. The Buckston Browne dinner will be held on June 8th at the Star and Garter Home, Richmond, Surrey, and there will be a reception at Down House, Downe, Kent, on July 20th, at 3.15 P.M., when Sir Buckston Browne will give an address on Charles Darwin.

National Council for Mental Hygiene

A series of lecture-discussions on Mental Hygiene in Everyday Life will be delivered in the lecture-room of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W., on Wednesdays at 5.30 P.M. Dr. J. A. Hadfield will speak on Anxiety (March 1st); Dr. E. A. Bennett on Confidence (8th); Dr. George Somerville on Superstition (15th); Dr. John Rickman on Ambition (22nd); Mr. C. W. Kimmins, D.Sc., on Adaptability (29th); and Dr. E. A. Hamilton-Pearson on Discipline (April 5th). Tickets may be obtained from the secretary of the Council, 78, Chandos House, Palmer-street, London, S.W., or at the lecture.

Joint Tuberculosis Council

After a meeting of the Council on Jan. 21st the members were entertained to lunch at the Hotel Russell by Dr. Lissant Cox, the chairman. The guests included Dr. A. B. Howitt, M.P., secretary of the Parliamentary Medical Committee, Sir Henry Jackson, M.P., Dr. W. J. O'Donovan, M.P., Mr. G. S. Elliston, M.P., Dr. Charles Porter, and Mr. Lewis Elliston. Dr. Lissant Cox proposed the health of the Guests and Dr. Howitt replied, praising the coördinating work of the Council. Dr. O'Donovan proposed the health of the Council, and Dr. Ernest Ward, in his reply, stressed the disgrace to our profession of the continued mortality and crippledom caused by tuberculosis of bovine origin. He advocated the boiling of milk before use in each individual household. Mr. G. S. Elliston then proposed thanks to Dr. Lissant Cox as host, and praised the work of the chairman and the hon. secretary, Dr. Ward. The vote was seconded by Dr. Jane Walker, and Dr. Lissant Cox replied.

Pharmaceutical Society of Great Britain

At a meeting of this society, to be held at 17, Bloomsbury-square, London, W.C., at 8.30 P.M. on Tuesday, Feb. 14th, Dr. J. A. Gunn, professor of pharmacology in the University of Oxford, will give a lecture on the Search for New Remedies.

Paddington Medical Society

The next meeting of this society will be held on Tuesday, Feb. 14th, at the Great Western Hotel, Paddington, at 9 P.M., when a discussion will take place on Problems of Medical Representation. Dr. E. K. Le Fleming, a direct representative on the General Medical Council, Dr. A. F. Heald, organising and assistant medical secretary of the London panel committee, and Mr. Ernest Ware, president of the Society of Members of the Royal College of Surgeons, will be the openers. Visitors are invited.

Fellowship of Medicine and Post-Graduate Medical Association

Dr. H. C. Cameron will lecture on Stammering and Bed wetting in the School-child in the series on practical problems in medicine and surgery at 4 P.M. at 11, Chandos-street, Cavendish-square, London, W., on Tuesday, Feb. 14th. Three courses will begin on Feb. 20th: an evening course of clinical and pathological demonstrations at the National Temperance Hospital on Mondays and Fridays, which will be limited to 16; a fortnight's course in medicine, surgery, and the specialties at the Prince of Wales's Hospital, Tottenham; and a practical pathology class at the Hospital for Consumption, Brompton, on two days a week from 11.30 A.M. to 1 P.M., which will be limited to six. Other forthcoming courses include a course in medicine, surgery, and gynæcology at the Royal Waterloo Hospital, March 6th to 25th; a course in orthopædics at the Royal National Orthopædic Hospital, March 6th to 18th; and an evening course in rheumatism at the British Red Cross Clinic on Tuesdays and Thursdays from March 7th to 23rd.

Royal Institute of Public Health

In July of last year the Royal Institute of Public Health moved into its new building in Queen-square, London, and on Feb. 7th a reception was held, at which Lady Leverhulme acted as hostess, in order that friends of the institute might have the opportunity of admiring the new premises. These have been built in an unpretentious and dignified style, and consist of four stories and a basement. The board room and administrative offices are on the ground floor. On the first floor is the chemistry department, where samples of several foodstuffs sent up for analysis were on view. A laboratory is set aside for the use of students in training for the diploma in public health, and is large enough to accommodate some 20 students at a time. The institute coöperates with official bodies in dealing with the problems of pure water- and milk-supplies, and epidemic diseases such as diphtheria and typhoid, and undertakes the bacteriological examination of water, sewage, food, and other materials such as the dyes used for fur. The laboratories are recognised as a place for research in connexion with the Beit Memorial Fellowships, and the institute encourages medical practitioners and others to make use of its facilities for original research, whether in preventive medicine, bacteriology, epidemiology and immunology, the analysis of foodstuffs, or other allied subjects.

PARLIAMENT

NOTES ON CURRENT TOPICS

Reassembly of Parliament

BOTH Houses of Parliament reassembled after the Christmas recess on Tuesday, Feb. 7th.

HOUSE OF COMMONS

TUESDAY, FEB. 7TH

Influenza Research

Sir WILLIAM DAVISON asked the Minister of Health whether any organised research was being conducted by or at the instance of his Department with a view to ascertaining the primary cause of influenza, and methods for its prevention, in view of the serious effects on the health and industry of the nation caused by recurring epidemics of that disease.—Sir E. HILTON YOUNG (Minister of Health) replied: Investigation into the virus diseases, of which influenza is believed to be one, is continually in progress at the National Institute for Medical Research. A special inquiry subsidised by my Department is also being made into the bacteria of the nose and throat with a view to

devising methods of prevention of such respiratory diseases as influenza. Hitherto, in this and other countries the direct verification of the influenza virus has proved impracticable because the effect of the organisms found cannot be proved experimentally in the absence of any susceptible species of animal. No general method of immunisation is accordingly at present available.

Viscountess ASTOR: Would it not be wiser not to talk so much about it? (Laughter and Cheers.) Does the Minister not think that it does more harm to talk about it, and would it not be as well to bear in mind what Job said: The thing which I greatly feared is come upon me? (Laughter).

No further answer was given.

Slum Clearance

Mr. EMMOTT asked the Minister of Health whether the Government's programme for slum clearance was limited to 12,000 houses a year.—Sir E. HILTON YOUNG replied: No, Sir. No limitation of the sort is imposed in the Government's programme for the clearance of slums. It is intended by the concentration of assistance from subsidies on slum clearance, and by encouraging the more active administration of the Act of 1930 by the responsible local authorities, to raise the rate of clearance as much as possible, without any arbitrary limitation. The figure of 12,000 houses a year was referred to by me as the estimated number for which, in the light of experience of the working of the Act, it is reasonable to make provision in the estimates for the coming year, which will be the first year of intensified effort to accelerate the rate of clearance. It is expected that after the first year the rate will be increased.

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Feb. 13th.—4.30 P.M., UNITED SERVICES. Paper. Major-General J. W. West: The Story of a Small Campaign: the Burma Rebellion of 1931.

TUESDAY.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Discussion: Iodine Compounds in Thyroid Disease. Openers: Prof. C. R. Harington (the Historical Aspect); Dr. H. Gardiner-Hill (the Clinical Aspect). Other speakers will take part. 8.30 P.M., PSYCHIATRY. Paper. Prof. Millais Culpin: The Occupational Neuroses (including Miners' Nystagmus). Members of the Section of Ophthalmology are specially invited to attend the Meeting.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) 7.45 P.M., NEUROLOGY. A Clinical Meeting will be held at the National Hospital, Queen-square, W.C. 1.

FRIDAY.—5.30 P.M., PHYSICAL MEDICINE. Demonstration. Dr. J. B. Mennell: Manipulative Methods. Members of the Section of Orthopædics are specially invited to attend the Meeting. 8.15 P.M., OBSTETRICS AND GYNÆCOLOGY. Paper. Dr. Elizabeth Hurdon and Dr. Helen Chambers: The Treatment of Carcinoma of the Body of the Uterus by Irradiation. Pathological Specimens. Dr. M. A. Bulman: 1. Tuberculous Endometritis. 2. Sarcoma of the Cervix Uteri. 3. Unruptured Interstitial Tubal Pregnancy. 8.30 P.M., RADIOLOGY. Short reports of cases will be given.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Feb. 13th.—8.30 P.M., Discussion on the Treatment of Peptic Ulcers by Duodenal Feeding, to be introduced by Dr. Ernest Young and Dr. G. R. M. Cordiner.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Manson House, 26, Portland-place, W.

THURSDAY, Feb. 16th.—8.15 P.M., Prof. J. Gordon Thomson: The Problem of Immunity in Malaria (lantern) preceded by a Demonstration at 7.45 P.M.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, Feb. 14th.—9 P.M. (at Great Western Royal Hotel, Paddington), Dr. E. K. Le Fleming, Dr. A. F. Heald, and Mr. Ernest Ware: Problems of Medical Representation.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

FRIDAY, Feb. 17th.—5 P.M. (at 1, Upper Montague-street, Russell-square, W.C.), Diphtheria Immunisation—Its Possibilities and Difficulties. Speakers: Dr. E. H. T. Nash, Dr. J. G. Forbes, Dr. Guy Bousfield, and Dr. R. M. F. Picken.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.

WEDNESDAY, Feb. 15th.—4.30 P.M. (at St. Mary Islington Hospital), Clinical Demonstration by Dr. W. R. M. Turtle.

BIOCHEMICAL SOCIETY.

FRIDAY, Feb. 17th.—4.30 P.M. (at the Lister Institute, Chelsea Bridge-road, London, S.W.), Communications.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W.C.

MONDAY, Feb. 13th.—5 P.M., Mr. P. N. B. Odgers: The Anatomy of the Lumbar and Lumbo-sacral Diarthroidal Joints in Man. (Arris and Gale lecture.)

WEDNESDAY.—5 P.M., Prof. R. J. S. McDowall: Experimental Shock, with special reference to Anæsthesia. (Arris and Gale lecture.)

FRIDAY.—5 P.M., Mr. R. W. Raven: Diverticula of the Pharynx and Œsophagus. (Arris and Gale lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Feb. 13th, to SATURDAY, Feb. 18th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. Practical Problems in Medicine and Surgery. Lecture by Dr. H. C. Cameron on Stammering and Bed-wetting in the School-child, Tues., at 4 P.M. (Members and Associates of the Fellowship only.)—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Antenatal Demonstration by Dame Louise McIlroy, Frid., at 5 P.M.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Post-graduate course in Dermatology. Clinical instruction daily at 2 and 6 P.M. Lectures at 5 P.M. on Tues. and Thurs.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Post-graduate course in Gynæcology. Lectures and operations daily. (Courses open only to Members and Associates of the Fellowship of Medicine.)

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

DAILY.—2 P.M., Operations, Medical and Surgical Out-patients.

MONDAY, Feb. 13th.—10 A.M., Medical Wards, Skin Dept., Surgical Wards. 2 P.M., Eye and Gynæcological Out-patients. 4.15 P.M., Lecture. Dr. Grainger Stewart: Compression Paraplegia.

TUESDAY.—10 A.M., Medical Wards, Surgical Demonstration. 2 P.M., Throat Out-patients. 4.15 P.M., Lecture. Mr. Addison: Urinary Conditions in Children.

WEDNESDAY.—10 A.M., Medical Wards, Children's Medical Out-patients. 2 P.M., Eye Out-patients. 4.45 P.M., Venereal Diseases Demonstration.

THURSDAY.—10 A.M., Neurological Out-patients. Demonstration of Fractures. 2 P.M., Eye and Genito-urinary Out-patients. 4.15 P.M., Lecture. Mr. Edgeley Curnock: Diseases of the Teeth.

FRIDAY.—10 A.M., Skin Out-patients. 12 noon, Lecture on Treatment. 2 P.M., Throat Out-patients. 4.15 P.M., Lecture. Dr. Reginald Ironside: Anæsthesia.

SATURDAY.—10 A.M., Medical and Surgical Wards, Children's Medical Out-patients. The Lectures at 4.15 P.M. are open to all Medical Practitioners without fee.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, Feb. 13th, to FRIDAY, Feb. 17th.—2 P.M. and 3.30 P.M., Demonstrations in Out-patients' Department.

UNIVERSITY COLLEGE, Gower-street, W.C.

MONDAY, Feb. 13th.—5 P.M., Mr. H. R. Ing, D.Phil.: Chemical Structure and Pharmacological Action. (First of six free lectures.)

ST. MARK'S HOSPITAL, City-road, E.C.

THURSDAY, Feb. 16th.—4 P.M., Dr. B. Alexander: Colitis.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

MONDAY, Feb. 13th, and following days.—10.30 P.M., Course in methods of examination and diagnosis.

ST. PETER'S HOSPITAL FOR STONE, Henrietta-street, W.C.

WEDNESDAY, Feb. 15th.—3 P.M., Mr. A. H. Harkness: Treatment of Acute Gonorrhœa.

LONDON JEWISH HOSPITAL, Stepney Green, E.

THURSDAY, Feb. 16th.—4 P.M., Mr. S. I. Levy: Enlarged Prostate and its Treatment. Lecture-demonstration.

PRINCESS ELIZABETH OF YORK HOSPITAL FOR CHILDREN, Shadwell, E.

WEDNESDAY, Feb. 15th.—3.30 P.M., Mr. H. P. Winsbury-White and Dr. O. H. Gotch: Medical and Surgical Aspects of Enuresis in Childhood. Lecture-demonstration.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.

THURSDAY, Feb. 16th.—9 P.M., Mr. John Hunter: Goitre.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Feb. 14th.—5 P.M., Dr. M. Sydney Thomson: Lupus Erythematosus.

THURSDAY.—3 P.M., Dr. I. Muende: Pathology Demonstration.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, Feb. 14th.—3.15 P.M., Dr. P. O. Ellison and Dr. S. McKenzie: Pathological Investigations.

ST. MARY'S HOSPITALS, Manchester.

FRIDAY, Feb. 17th.—4.15 P.M. (at the Whitworth-street West Hospital), Mr. Morley: Some Endocrine Disturbances of Childhood.

ROYAL INSTITUTE OF PUBLIC HEALTH, Queen-square.

WEDNESDAY, Feb. 15th.—4.30 P.M., Miss M. W. Edminson: The Rheumatism Clinic and its Relation to the Social Services.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.

WEDNESDAY, Feb. 15th.—4 P.M., Mr. V. Z. Cope: Demonstration of Surgical Cases.

GLASGOW POST-GRADUATE LECTURES.

TUESDAY, Feb. 14th.—3.30 P.M. (in the Faculty Hall, St. Vincent-street), Dr. A. J. Ballantyne: Interpretation of Ophthalmoscopic Findings.

WEDNESDAY.—4.15 P.M. (at the Royal Infirmary), Mr. J. Patrick: Gynæcological Cases.

NOTES, COMMENTS, AND ABSTRACTS

MILK CONSUMPTION IN RURAL HOUSEHOLDS

BY JESSIE H. GELLATLY, M.D., D.P.H. EDIN.
ASSISTANT MEDICAL OFFICER OF HEALTH, CAMBRIDGESHIRE

THE households to which this investigation refers are situated in one of the East Anglian arable farming counties. Many years' experience of school medical inspection in this area has shown that the majority of the children inhabiting it do not get milk as a beverage, and that tea of varying strength is commonly drunk from weaning, which is not, as a rule, complete until well on in the second year of life. In order to obtain evidence of the amount of milk actually used in a number of representative households, 150 mothers attending school medical inspections were questioned. These mothers were not selected in any way except that in the larger schools only the first four or five mothers attending were questioned, in order that as many villages as possible might be included. It should be noted, however, that the sample probably embraces an undue proportion of the better types, as in many villages it is only the more careful and intelligent mothers who trouble to come to medical inspections. For this reason, the figures obtained almost certainly represent a consumption of milk greater than that of the district as a whole—a suggestion further supported by the statements of several local milk purveyors.

The 150 households investigated comprise 772 persons; the total amount of whole milk used per diem was 241 pints, or an average of 0·3 pint per capita. This amount corresponds closely to the estimated consumption given by R. B. Forrester [1] of just under one-third of a pint per capita per diem for "a large number of important towns." In Table A the household consumption per capita is sorted by the total number of persons (all ages) in each household. It will be seen that as the number in the household increases, the consumption per capita decreases very markedly. For example, in households of three or less persons, 46 per cent. use more than 0·59 pint per capita per diem, while 11 per cent. use less than 0·2 pint, but in households of seven or more, none use more than 0·59 pint and 67 per cent. use less than 0·2 pint.

In the tables the household consumption per capita is given as proportion of a pint per diem and the frequency distribution of households is expressed as percentage.

Table B shows the household consumption per capita per diem sorted by the total number of children under 14 years of age in each household. Again there are clear indications that the amount of milk taken by each household bears little or no relationship to the needs of the household.

Table C gives the consumption per capita sorted according to the occupation of the head of the household. In connexion with this grouping it may be noted that the wage of "farm workers" is from 30*s.* to 35*s.* a week, that "other workers" have decidedly higher earnings, and that the weekly income of the third class (widows, unemployed, and so forth) is on the average several shillings below that of the farm workers.

While Tables A and B show that the amount of milk used did not by any means correspond to the needs of the household, Table C shows that the weekly income does definitely influence the amount of milk used.

Skim milk was consumed in 35 families. Ten of these families bought no whole milk; in ten others whole milk was only used in tea; eight of the 35 families bought skim milk only occasionally for cooking, and two took a supply of whole milk averaging over one-third pint per capita in addition to the skim milk. In many of the rural districts no skim milk is on sale; where it is obtainable it is practically always machine skimmed (usual price 2*d.* a quart).

TABLE A

—		Mean consumption per capita in pints per diem.	Household consumption per capita in pints per diem. None.	0·01–0·19.	0·2–0·59.	0·6 and over.	No. of households.
Total number of persons in household.	3 or less..	0·5	7%	4%	43%	46%	28
	4	0·38	3%	5%	64%	28%	39
	5	0·3	14%	11%	63%	12%	35
	6	0·3	9%	28%	56%	5%	21
	7 or more.	0·14	15%	52%	33%	—	27
—		—	9%	17%	55%	19%	150

TABLE B

Number of children under 14 in household.	1	0·35	6%	6%	51%	37%	35
	2	0·38	5%	7%	65%	23%	43
	3	0·3	11%	8%	67%	14%	36
	4	0·16	16%	42%	37%	5%	19
	5 and over	0·12	18%	53%	29%	—	17
—		—	9%	17%	55%	19%	150

TABLE C

Occupation of head of family.	Farm workers ..	0·3	6%	27%	60%	7%	71
	Other workers ..	0·5	3%	7%	51%	39%	60
	Widows, unemployed, &c... ..	0·14	42%	11%	47%	—	19
—		—	9%	17%	55%	19%	150

In view of the satisfactory results recorded by G. Leighton and M. L. Clark [2] obtained by the addition of skim milk to the diet of elementary school-children it would seem desirable that the use of this cheap means of improving nutrition in a population such as that now under consideration should be actively encouraged.

Condensed milk is apparently not much used, and as a rule seems to be bought only occasionally when whole milk cannot be obtained in sufficient quantity. Out of the 150 households investigated only three used nothing but tinned milk, and in these three cases the particulars were as follows:—

Case.	Total persons.	Children under 14.	Amount used per week.
1	5	3	3 tins (2 of these skimmed).
2	6	4	3 tins.
3	5	3	6 or 7 ins.

Another family of five persons (including three children) took half a pint of whole milk per day, and two tins of skimmed condensed milk per week. Three families kept goats, from which, however, they did not obtain an adequate supply of milk, due, apparently to haphazard management. Only two families out of the 150 received any allowance of milk from the employer.

The price of whole milk varied from 2½*d.* per pint all the year round to 3½*d.* per pint in winter; as a rule, when milk was called for by the purchaser, the price was reduced by ½*d.* per pint. In most cases milk must be called for, sometimes at inconvenient times. For instance, the family using six to seven tins of condensed milk as their whole supply (see above) lived over a mile from the nearest producer. In this

[1] The Fluid Milk Market in London. H.M. Stationery Office, Adastral House, Kingsway. 1927.

[2] THE LANCET, 1929, i., 40.

case there was no delivery service, and milk required had to be called for in the morning, but the children were too young to make the double journey before going to school so that if whole milk were to be got it had to be collected by the children as they went to school and kept there all day. Many purveyors only retail their afternoon milk, and this can be fetched conveniently by the children on their way home from school. The supply of milk is often limited so that more than the usual pint per family per day cannot be obtained even if desired. Most of the milk is sent to neighbouring towns in bulk, and in any shortage the local retail supply suffers first. In a few villages, where the local demand is good, milk may be delivered from a considerable distance. In one hamlet, on a main road, all the milk was delivered from the nearest town, four miles away, and the local farmer kept no cows, even for his own use.

In the majority of the families in which the supply of milk is inadequate, there is no compensating supply of other animal fats of good quality—margarine and lard being largely used in place of butter. Little fresh meat is taken, and the diet generally, although sufficient in quantity, is poor in quality.

I gratefully acknowledge advice received from Dr. R. McG. Carslaw, of the University School of Agriculture, in the preparation of this article.

A FIGHTING HERBALIST

WITH great care and skill Mr. Wallis Kew, a past president of the Lincolnshire Naturalists' Union, and Mr. H. E. Powell, librarian of the Royal Society of Medicine, have collected from the records much information concerning Thomas Johnson, a great herbalist and a gallant soldier.[1] Johnson lived between 1600 and 1644, and was thus a professional contemporary as well as a fellow royalist with William Harvey. He was born at Selby, Yorkshire, and after serving an apprenticeship of eight years, paying the necessary fees and presenting a silver spoon, was admitted a Freeman of the Society of Apothecaries in 1628. He then set up as an apothecary at Snow Hill, in the parish of St. Sepulchre, and rapidly became the leading herbalist of his day, making numerous botanising excursions, or as he called them "simpling voyages," to various parts of the country in order to identify and record the wild plants to be found there. Johnson edited the famous second edition of Gerarde's Herbal. His contributions to botany were continuous and progressive, and had he lived longer he would probably have succeeded in his evident purpose of compiling a complete list and description of the flora of his native country. His services, however, did not end with botany; his translation of the book of Ambrose Paré on "Surgery" was published in 1634, and was of such use to the surgical profession in this country that it was three times reissued before his death.

When the Civil War broke out Johnson was faced with the necessity of sacrificing either his principles or his business, for the feeling in London was so strongly in favour of the Parliament that in all probability he would have been arrested and his property sequestrated had he remained there. Accordingly, in 1643, he joined the King at Oxford, and at the royal request the university admitted him to the honorary degree of "doctor of physik." Johnson became a lieutenant-colonel in the London regiment raised by Marmaduke Rawdon, the city merchant, who had been a train-band captain. He lost his life fighting in defence of Basing, or "Loyalty" House, as it was called, the seat of the Marquis of Winchester, against repeated and prolonged attacks by the parliamentarian forces. The position was one of considerable importance as it commanded the Great West road, near Basingstoke, and convoys could readily be intercepted even as far away as Hindhead. During the summer of 1644 the garrison, then heavily beleagured, were hard pressed. Colonel Gage undertook the difficult task of relief, and on Sept. 10th, 1644, assisted by a timely sortie of the garrison, led by Col. Johnson, effected a triumphant relief. It was during another sortie four days later that Johnson received the wound in the shoulder from which he died. The account of the event in a contemporary description of the siege, ascribed to the Marquis himself or his lady, is as follows:—

"Lieutenant-Colonel Johnson, Doctor of Physique, was here shot in the shoulder, whereby contracting a Feaver he dyed a fortnight after, his worth challenging Funerall teares, being no lesse eminent in the Garrison for his valour and conduct, as a Souldier, then famous through the Kingdom for his excellency as an Herbarist, and Physician."

The authors of this biography have performed a valuable service in reviving the memory of this excellent man, whose memory is preserved in a genus of Australasian plants named after him by the famous botanist Robert Brown, and called "Johnsonia."

[1] Thomas Johnson, Botanist and Royalist. By H. Wallis Kew and H. E. Powell. London: Longmans, Green and Co., Ltd. 1932. Pp. 151. 8s. 6d.

SUCCESSFUL CIRCUMVENTION OF ŒSOPHAGEAL OBSTRUCTION

THE relative value of gastrostomy and intubation in the palliative treatment of obstruction of the œsophagus has lately been discussed in our columns.[1] What can be done in the exceptional case is illustrated by two remarkable reports in the current issue of the *British Journal of Surgery* (January, 1933, pp. 338 and 447).

Mr. H. H. Sampson's patient was a woman of 27, who swallowed ammonia and two months later developed dysphagia, which became so bad as to call for gastrostomy. Attempts to dilate or divide the stricture proving fruitless, the construction of an artificial œsophagus was begun in February, 1929, 21 months after the ammonia was taken. The first operation had for its object the formation of a subcutaneous skin tube to extend from the upper to the lower aperture of the thorax. This was successfully carried out, and a fortnight later the cervical œsophagus was exposed through a longitudinal incision and divided as low as possible; the lower end was closed and invaginated, and the upper end was anastomosed with the upper end of the skin tube. The raw area was covered with a skin flap from the neck. A fistula developed at the level of the anastomosis, but leakage from it decreased gradually. About six weeks later a left pararectal incision was made in the abdomen and a portion of jejunum, 6 in. long, was isolated so that only its vascular supply remained; the cut ends of jejunum were joined by end-to-end anastomosis. The isolated jejunal loop was brought to the front of the stomach into which its distal end was sutured, the proximal end being united, subcutaneously, to the lower end of the skin tube. Nine days later a drink of water was swallowed successfully, though there was some leakage at both anastomoses; these fistulas ultimately healed, and nine months after the first operation the new œsophagus was working perfectly. It has continued to give satisfaction ever since.

In the case described by Mr. Arthur Evans, the function of the œsophagus has been supplied by a rubber tube connecting the pharynx with a gastrostomy opening. The patient was a woman of 40 who, in 1909, complained of hoarseness and increasing difficulty in swallowing solids. She proved to have a malignant mass occupying the lower part of the pharynx and extending into the vocal cords. Two months after her first visit, at the urgent request of her friends, Mr. Evans made an attempt to remove the growth. Gastrostomy was first performed, and a few days later the growth was excised; this necessitated the removal of the larynx and the upper part of the œsophagus. The trachea was cut across

[1] THE LANCET, 1932, ii., 1434; Jan. 7th, p. 55.

obliquely and the lower end brought to the surface; the pharynx was divided above the growth and the œsophagus below it, the cut end of the œsophagus being ligatured. The wound was closed except for the lower inch, and convalescence was uneventful; later, the lower inch of the opening was sewn up and the incision extended upwards. An attempt was made to cover the wound by a small celluloid cup connected with the gastrostomy opening by a tube, but the arrangement did not work well. Later the pharyngeal opening was closed, and a new one made immediately below the hyoid bone. Through this, the short end of a rubber empyema tube was passed, kept in position by tapes encircling the neck, and tied to the holes in the flanges of the tube; the long end was connected with the gastrostomy tube. This apparatus was a success, and was subsequently replaced by a curved rubber tube with a flange, connected by rubber tubing with another tube with a flange which fits the gastrostomy opening. The patient married less than a year after the first operation, and now, 23 years afterwards, is in good health and leads an active life.

CLEAN FOOD FACTORIES

ABOUT 400 people attended a meeting held in London on Jan. 20th, jointly by the Royal Sanitary Institute and the food group of the Society of Chemical Industry, to discuss Factory Cleanliness in the Food Industry. Mr. E. B. Hughes, of Messrs. Lyons, laid it down that food factories should be planned as such from the outset, to facilitate handling of food, and to secure cleanliness by non-absorbent surfaces and good lighting. To avoid infestation there should be no harbourage for insects or other pests. Antiseptics to be used sparingly, though they were essential. Washing was very important. He instanced the cleaning of rotary curved knives used in cutting up meat; these, when dismounted, are first washed and wiped, then washed again with soft soap and hypochlorite solution, and finally wiped dry with a clean cloth. Inspectors and visitors are useful in the factory, though apt to be an annoyance to a young manager. Dr. Thomas Carnwath spoke of the way in which cleanliness reduced the dangers of keeping foods. Lieut.-Colonel G. Leighton emphasised the need for cleanliness not only of the works but of the workers. Sir Weldon Dalrymple-Champneys considered it most important that the methods of cleanliness should be understood by the workers so they could at once readjust their methods when an interruption of the factory routine had suddenly occurred. Dr. Naylor Barlow, medical officer of health for Wallasey, said it was intolerable that a food factory should be fitted into an old five-storey building with dark corners and soft wood floors, and asked for a limit on the relabelling of food preparations by retailers.

On the following day a party was taken over the laboratories of Messrs. Lyons in the Hammersmith-road, London.

Appointments

BRAILSFORD, JAMES F., M.D., Ch.B. Birm., has been appointed Radiological Demonstrator in Living Anatomy in the University of Birmingham.

MOWER WHITE, ANN, L.R.C.P. Lond., M.R.C.S. First Assistant, Children's Department, University College Hospital.

TRAFFORD, H., L.R.C.P. Lond., M.R.C.S., Certifying Surgeon under the Factory and Workshop Acts for Warlingham, Surrey.

Vacancies

For further information refer to the advertisement columns

All Saints' Hospital, Austral-street, West-square, St. George's-road, S.E.—Res. H.S. At rate of £100.

Birkenhead General Hospital.—Hon. Orthopædic Surgeon. Res. Sen. H.S. At rate of £150. Also Second H.S., H.P., and Cas. O. Each at rate of £100.

Blackburn Royal Infirmary.—4th H.S. £150.

Bootle General Hospital.—H.P., Two H.S.'s, and Cas. O. All at rate of £150.

Bristol General Hospital.—Hon. Physician.

Burnley, Victoria Hospital.—H.P. At rate of £150.

Cambridge, Papworth Village Settlement.—3rd Asst. M.O. £300 Also H.P. At rate of £150.

Cardiff City Mental Hospital, Whitchurch.—Sen. Asst. M.O. £570.

Carlisle, Cumberland Infirmary.—H.S. At rate of £175. Also H.P., 2nd H.S., and H.S. to Spec. Depts. Each at rate of £155.

Carmarthen, Joint Counties Mental Hospital.—Med. Supt. £800.

Chester, East Lancashire Tuberculosis Colony, Gt. Barrow.—Asst. M.O. At rate of £275.

City of London Maternity Hospital, City-road, E.C.—Asst. Res. M.O. At rate of £80.

Derby County Mental Hospital, Mickleover.—Deputy Med. Supt. £600.

Dudley, Guest Hospital.—Asst. H.S. £170.

East Ham Memorial Hospital, Shrewsbury-road, E.—Hon. Surg. to Ear, Nose, and Throat Dept. Also Res. M.O. At rate of £200.

Hackney Hospital, High-street, Homerton, E.—Res. Asst. M.O. £350.

Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—Cas. M.O. for Out-patient Dept. At rate of £100.

Harrogate, Royal Bath Hospital.—Res. M.O. At rate of £156.

Hillingdon County Hospital.—Res. Asst. M.O. £400.

Hospital for Sick Children, Gt. Ormond-street, W.C.—H.P. and H.S. Each at rate of £100.

Ilford, King George Hospital.—H.S. At rate of £100.

Larbert, Royal Scottish National Institution.—Asst. M.O. £350.

Leigh Infirmary, Lancs.—Res. H.S. At rate of £175.

London Lock Hospital, 91, Dean-street, W.—Res. M.O. At rate of £175.

Manchester, Ancoats Hospital.—Hon. Asst. Phys.

Manchester Babies Hospital, Burnage-lane, Levenshulme.—Jun. Res. M.O. At rate of £50.

Manchester, Christie Hospital and Holt Radium Institute.—Res. M.O. £150.

Manchester, Crumpsall Hospital and Institution.—Med. Supt £1200.

Northwood, Mount Vernon Hospital.—H.S. At rate of £150.

Norwich Infirmary.—Res. Asst. M.O. £480.

Nottingham General Hospital.—H.S. At rate of £150.

Paddington Green Children's Hospital, W.—Hon. Surg. to Ear, Nose, and Throat Dept.

Preston and County of Lancaster Royal Infirmary.—H.S. and Cas. O. £150.

Prince of Wales's General Hospital, N.—Res. Sen. and Jun. H.P.'s and H.S.'s. At rate of £120 and £90 respectively.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—H.S. At rate of £125.

Royal Air Force Medical Service.—Medical Officers.

St. Alfege's Hospital, Vanbrugh-hill, S.E.—Res. Asst. M.O. £350.

St. Giles' Hospital, Brunswick-square, Camberwell, S.E.—Res. Asst. M.O. £350.

St. Mary Abbot's Hospital, Marloes-road, Kensington, W.—Temp. Asst. M.O. At rate of £250.

St. Mary Islington Hospital, Highgate-hill, N.—Res. Asst. M.O. £350.

Staunton-on-Wye, Herefordshire, Jarvis Charity.—Res. M.O. £150.

Sunderland, Royal Infirmary.—Sen. H.S. £200.

West London Hospital, Hammersmith-road, W.—Asst. Phys. for Diseases of Children.

West Riding of Yorkshire C.C.—School Medical Inspector. £500.

Westmorland County Hospital, Kendal.—H.S. At rate of £200.

Weston-super-Mare General Hospital.—Res. H.S. £150.

Winchester, Royal Hampshire County Hospital.—H.S. At rate of £125.

Windsor, King Edward VII. Hospital.—Res. M.O. £200.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Bromley (Kent).

Births, Marriages, and Deaths

BIRTHS

AVERY.—On Feb. 3rd, the wife of Harris Avery, M.B., of Selsdon-road, West Norwood, of a son.

DAVEY.—On Feb. 2nd, at Rockleigh, Gloucester, the wife of Dr. E. N. Davey, of a daughter.

DEATHS

BELL.—On Jan. 31st, Squadron Leader Robert Ernest Bell, M.B., B.Ch., R.A.F. (retired), as the result of an accident.

EICHHOLZ.—On Feb. 6th, at North End House, W., Alfred Eichholz, C.B.E., M.D., aged 63.

DELL.—On Feb. 1st, at The Slade House, Stroud, Charles Mackintosh Dell, M.R.C.S., L.R.C.P., aged 27.

HALLETT.—On Feb. 5th, at Long Wittenham, Frederic Greville Hallett, Knight, O.B.E., sometime Secretary of the Conjoint Examining Board in England and of the Imperial Cancer Research Fund.

KERR.—On Jan. 29th, at Brunswick-place, Hove, Squadron Leader George Douglas Kerr, M.R.C.S., L.R.C.P. Lond., late R.A.F., aged 70 years.

LEWIS.—On Jan. 29th, 1933, at 5, Sketty-road, Swansea, Rhys T. Lewis, M.D. Lond., aged 38 years.

OPPENHEIMER.—On Jan. 31st, at Nice, France, Heinrich Oppenheimer, M.D., LL.D., Ph.D., Lit.D., late of College-crescent, N.W., in his 64th year.

STEPHENSON.—On Feb. 2nd, at Orsett-terrace, W., John Stephenson, Lieut.-Colonel, I.M.S. (retired), C.I.E., F.R.C.S., F.R.S.

WEMYSS.—On Feb. 3rd, at Moray-place, Edinburgh, Herbert Lindesay Watson Wemyss, M.D., F.R.C.P.E.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.